excellent EXCELLENCY IN ENTREPRENEURSHIP

Mapping of the key entrepreneurial competences

Deliverable D1.2

ExcellEnt: *Excellency in Entrepreneurship: Expanding European entrepreneurship by boosting youth (self) employability and promoting a sharing resources culture*

Horizon Europe Programme, Project number 101100515

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Current version: V0.5, January 2023

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Deliverable Information

Grant Agreement #:	101100515
Project Title:	Excellency in Entrepreneurship: Expanding European entrepreneurship by boosting youth (self) employability and promoting a sharing resources culture
Project Acronym	ExcellEnt
Project Start Date:	January 15th, 2023
Work Package:	WP1 - Actionable models for successful entrepreneurship
Related Task(s):	T1.2: Narratives integration
Deliverable Title:	D1.2: Mapping of the key entrepreneurial competences
Deliverable Type:	R — Document, report
Dissemination level	PU - Public
Number of Pages:	92
Date of last Update	January 14, 2024
Responsible Organization:	Sabanci University
Contributors	All partners

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History of changes

Version	Date	Prepared by	Comments
V0.1	1st December 2023	Sabanci University	Initial draft
V0.2	15th December 2023	Sabanci University	Integration of the narratives
V0.3	4th January 2024	Sabanci University	Integration and analysis of narratives
V0.4	12th January 2024	Sabanci University	Finalization of the deliverable
V0.5	14th January 2024	Sabanci University	Final updates based on partners feedback

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Executive Summary

The ExcellEnt project aspires to explore novel ways to capture, preserve, curate, organise and communicate sets of unstructured entrepreneurial experiences, stories, narratives with an emphasis to those of younger audience that is addressing the challenge of (self)employability, so that they can constitute a shared resource that people can augment, and that individuals as well as institutions can delve into, to find inspiration for new ways of conceptualising and promoting entrepreneurship, and how these new ways can be reflected into every-day practices and policies, and foundations for visions of our common European future.

Task **1.2** focuses on a comprehensive analysis of the interview results gathered in Task 1.1., from the perspectives of entrepreneurial competences and attitudes. Our main objective in this task is to identify the most important competences and attitudes that make entrepreneurs successful across six ecosystems. This task also investigates the paths that entrepreneurs follow to acquire these competences and attitudes. By the end of this task, the most important entrepreneurial competences and attitudes that are common and divergent across six targeted ecosystems- Bulgaria, France, Ireland, Greece, Turkey, and Ukraine – investigated as well as the most efficient paths to acquire them are identified.

The competences listed in European Entrepreneurship Competence Framework (EntreComp) are taken as the base of the analysis, while the competences not included in EntreComp are coded as emergent competences. For the analysis, the partners were asked to rate the level of importance of EntreComp and emergent competences by considering both the frequency of the related quotes in the interviews, as well as how strongly the interviewees emphasized them in their statements. A 5-point likert scale was used for rating the importance levels (5-absolutely essential, 4-Very important, 3- Of average importance, 2-Of little importance, 1-Not important at all). Besides the ratings, partners also asked to present quotes associated with each competence from the interviews with the entrepreneurs, HEIs, incubators, and policy makers in each ecosystem. These quotes were included due to providing support and clues for the identification of these competences.

The analysis of the competences and attitudes reveals that the most important ones which are common across six ecosystems are "motivation and perseverance", "coping with uncertainty, ambiguity and risk", "working with others" and "learning through experience". These are the competences that are listed in

EntreComp Framework. Among the emergent competences, "resilience", "coachability" and "flexibility and agility" are the most highlighted competences across different contexts.

The analysis of the paths to acquire competences and attitude to successfully launch and run new ventures across six targeted ecosystems reveal that although entrepreneurial landscapes across these countries are distinct in their institutional, cultural, and economic contexts, entrepreneurs follow similar paths. The main paths are "formal education and training", exposure to "practical experience" as professionals or entrepreneurs, and "network and community engagement". This analysis allows us to observe a complex yet coherent picture of European entrepreneurship. While unique in their contexts and challenges, the most important competences and attitudes that help entrepreneurs being successful are similar. Furthermore, the entrepreneurs in these ecosystems find some common ways of acquiring the competences and attitudes that lead them to success.

Introduction

Task **T1.2** represents a key step for the ExcellEnt project since it focuses on a comprehensive analysis of the interview results gathered in Task 1.1., from the perspectives of entrepreneurial skills. The main objective of this task is to identify current patterns and differentiating factors among the interviewees. The results of this study allow us to decode the DNA of entrepreneurial success. This task and the associated deliverable D1.2 reveal the results of the analysis of interviews conducted within T1.1. By the end of this task, the most important entrepreneurial competences and attitudes that are common across all ecosystems investigated as well as the most efficient paths to acquire them are identified. The conclusions from the task are crucial for the development of effective training and education programs for aspiring entrepreneurs, contributing to the overall success of the project.

Task 1.2 aims to answer two questions: (i) What are the most important competences and attitudes in each ecosystem within the project scope, namely Bulgaria, France, Greece, Ireland, Turkiye and Ukraine? (ii) What are the most common entrepreneurial competences and attitudes across all ecosystems?, and (iii) What are the most efficient paths to acquire these competences and attitudes?

Task 1.2 answers these questions by studying the entrepreneurial competences and attitudes emerged from the interviewees with startups, universities and HEIs, and support organisations that were conducted in 6 European ecosystems (Bulgaria, France, Greece, Ireland, Turkiye, and Ukraine), analysing the competences and attitudes that align with the European Entrepreneurship Competence Framework

(EntreComp), categorizing other competences and attitudes that arise but not included in Entrecomp, assessing the importance of each competence and attitudes on a five-point likert scale, and by identifying the most efficient paths that are followed to acquire the most important competences and attitudes.

The deliverable D1.2 *Mapping of the Entrepreneurial Competences* are related to D1.1 *Analyzing Successful Entrepreneurial Trajectories* and D1.*3 Integrating theoretical models and field practice,* and as such must be read collectively in order for the reader to gain a comprehensive overview of the entrepreneurial competences, how they are important and how they are acquired by entrepreneurs, what the role of universities and HEIs, and support organizations for the development of these competences.

Entrepreneurship and Entrepreneurship Competences

In the scope of this research and this publication, we embrace the definition of entreprenurship as a process of identifying and exploting business opportunities (Gartner, 1985; Shane & Venkataraman 2000). Owing to the essence of the construct, the study of entreprenurship has quite an eclectic nature to which several fields have contributed, including economy, sociology, psychology, and management. Numerious studies have researched the individual, team, and organizational level enabling factors for succesful entreprenurship (See, e.g., Reis, Fleury, and Carvalho, 2020 for meta-analytical findings).

Competences are conceptualized as high-level abilities those align knowledge, skills, and personal characteristics to help the entrepreneurs perform different and complex tasks successfully (Man, Lau, and Chan, 2002; Markman and Baron, 2003). The group of abilities towards entreprenurship have been studied under the umbrealla concept of entrepreneurial competences, which include a set of knowledge, skills, abilities, and personality traits (Frese and Gielnik, 2014; Kerr, Kerr, and Xu, 2018).

Entrepreneurial competences is a widely covered overarching theme both in scientific and notable practice-oriented publications. The posited competence models vary in their complexity, levels of analysis, and in terms of the included items in the sets of competences (Krueger et al, 2000). To mention a lean example, Moberg et al. (2014) posits six 'entrepreneurial skills'- creativity, planning, financial literacy, resource marshalling, managing uncertainty/ambiguity and teamwork- under three stages-exploration, evaluation and exploitation. In their review of meta-analytic findings on entrepreneurship, Frese and Gielnik (2014) show the measured impacts of constructs in the entrepreneurship literature on

venture formation and venture success separately. The constructs with significant effects were as follows: (a) personality constructs: self-efficacy, achievement motivation, proactive personality, risk-propensity, innovativeness, stress tolerance, autonomy, locus of control, conscientiousness, neuroticism, openness to experience, agreeableness, extraversion, (b) human and social capital constructs: human capital, social capital and (c) strategy constructs: strategic planning, business planning, entrepreneurial orientation, innovation. One generally accepted rule in these studies and models is the staged nature of entrepreneurship. While it is possible to divide it into several substages, the process of entrepreneurship includes three main phases: (1) the opportunity identification phase, (2) the launch phase in which the entrepreneur compiles the resources to start the venture, (3) the scale-up phase during which the entrepreneur manages the resources to make it survive and grow (Baron, 2007). Throughout the different phases, entrepreneurs need to acquire certain competences in response to the necessities of their business plans, strategies, and the changing environmental conditions (Mishra and Zachary, 2015; Zahra, Sapienza, and Davidsson, 2006). In Figure 1, we exhibit the above-mentioned multi-level, multi-phase, and dynamic nature of entrepreneurship, which we have embraced in the scope of this study.

Competences at Different Levels
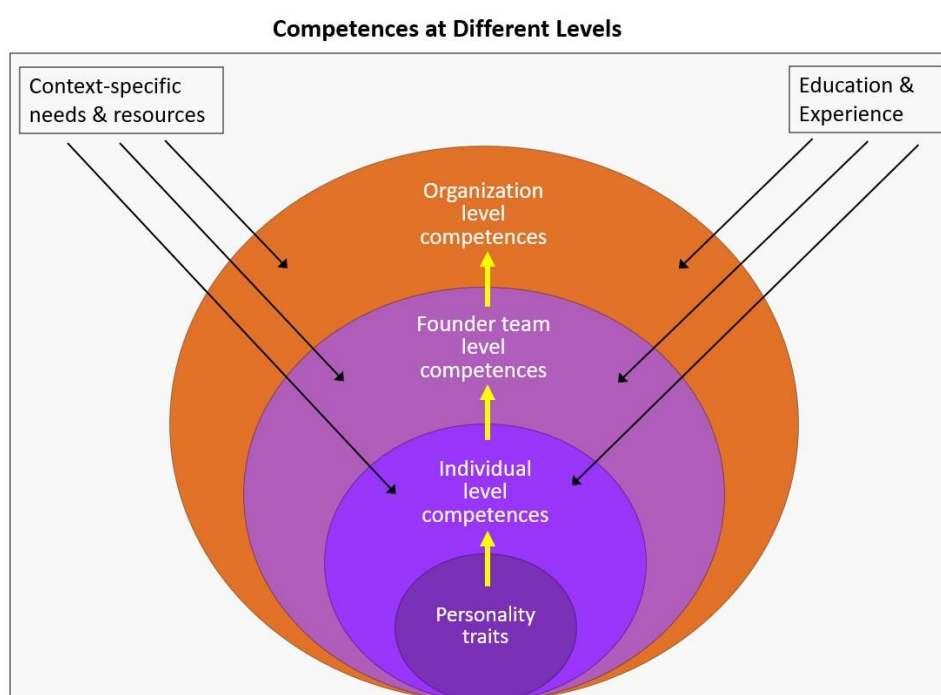
Figure 1: Entrepreneurship Competences at Different Levels

As our research aims also included the field testing of the competences across different contexts and comparing to the broad EntreComp model, we next provide the descriptions for the competences in the EntreComp Framework. The following table exhibits the descriptions of the competences in EntreComp with the descriptors taken from the EU publication "EntreComp: The Entrepreneurship Competence Framework" (Bacigalupo et al, 2016).

Table 1: Descriptors of Entrepreneurship Competences in the EntreComp Framework

Competences in Entrecomp- Listed by importance	Descriptors of Competences in the EntreComp Framework
Motivation and perseverance	*Be determined to turn ideas into action and satisfy your need to achieve *Be prepared to be patient and keep trying to achieve your long-term individual or group aims *Be resilient under pressure, adversity, and temporary failure
Coping with uncertainty, ambiguity, and risk	*Make decisions when the result of that decision is uncertain, when the information available is partial or ambiguous, or when there is a risk of unintended outcomes *Within the value-creating process, include structured ways of testing ideas and prototypes from the early stages, to reduce risks of failing *Handle fast-moving situations promptly and flexibly
Working with others	*Work together and co-operate with others to develop ideas and turn them into action *Network *Solve conflicts and face up to competition positively when necessary
Learning through experience	*Use any initiative for value creation as a learning opportunity *Learn with others, including peers and mentors *Reflect and learn from both success and failure (your own and other people's)
Spotting opportunities	*Identify and seize opportunities to create value by exploring the social, cultural and economic landscape *Identify needs and challenges that need to be met *Establish new connections and bring together scattered elements of the landscape to create opportunities to create value
Valuing ideas	*Judge what value is in social, cultural and economic terms *Recognise the potential an idea has for creating value and identify suitable ways of making the most out of it
Planning and management	*Set long-, medium- and short-term goals *Define priorities and action plans *Adapt to unforeseen changes

Vision	*Imagine the future *Develop a vision to turn ideas into action *Visualise future scenarios to help guide effort and action
Mobilising resources	*Get and manage the material, non-material and digital resources needed to turn ideas into action *Make the most of limited resources *Get and manage the competences needed at any stage, including technical, legal, tax and digital competences
Financial and economic literacy	*Estimate the cost of turning an idea into a valuecreating activity *Plan, put in place and evaluate financial decisions over time *Manage financing to make sure my value-creating activity can last over the long term
Mobilising others	*Inspire and enthuse relevant stakeholders *Get the support needed to achieve valuable outcomes *Demonstrate effective communication, persuasion, negotiation and leadership
Ethical and sustainable thinking	*Assess the consequences of ideas that bring value and the effect of entrepreneurial action on the target community, the market, society and the environment *Reflect on how sustainable long-term social, cultural and economic goals are, and the course of action chosen *Act responsibly
Self-awareness and self-efficacy	*Reflect on your needs, aspirations and wants in the short, medium and long term *Identify and assess your individual and group strengths and weaknesses * Believe in your ability to influence the course of events, despite uncertainty, setbacks and temporary failures
Taking the initiative	*Initiate processes that create value *Take up challenges *Act and work independently to achieve goals, stick to intentions and carry out planned tasks
Creativity	*Develop several ideas and opportunities to create value, including better solutions to existing and new challenges *Explore and experiment with innovative approaches *Combine knowledge and resources to achieve valuable effects

Methodology

This section describes the approach and methodology used to analyze the data collected through interviews for the mapping of entrepreneurial competences. We present a detailed overview of the sample, and the methodology of analyzing the interview data.

Sources of data used in analyses are the interview summary reports and raw data of interviews. A summary report template was prepared, and internal stakeholders were asked to complete these summary reports. The summary reports have a common structure and aim to identify the entrepreneurial competences observed in interviews and highlight their level of importance.

Desk Research covers the review of the existing literature related to entrepreneurial competences and attitudes. The commonalities and differences among the concepts such as competence, attitude, behavior and resources are identified. Among the studies reviewed, European Entrepreneurship Competence Framework (EntreComp) provides an excellent framework to understand and categorize entrepreneurial competences. It is taken as the base and compass for the analysis of the data. EntreComp identifies 15 different entrepreneurial competences including "spotting opportunities", "creativity", "vision", "valuing ideas", "ethical and sustainable thinking", "self-awareness and self-efficacy", "motivation and perseverance", "mobilising resources", "financial and economic literacy", "mobilizing others", "taking the initiative", "planning and management", "coping with uncertainty, ambiguity and risk", "working with others" and "learning through experience".

Data coding includes the codification of the data collected through interviews. Interview summary reports and raw interview data were read and reviewed at least twice, and the 15 entrepreneurial competences highlighted in EntreComp were identified. The relevant quotes representing the identified competences are also stated. Based on how frequently the relevant competence is mentioned in the interviews, the importance of this competence is selected. The importance of the relevant competence is assessed over 5-point Likert scale (5=Absolutely essential, 4= Very important, 3= Of average importance, 2= Of little importance, 1= Not important at all).

Table 2: A sample sheet for the competences in EntreComp Framework

Competence	Importance level	Quote
Spotting opportunities	Absolutely essential	"Try to understand the problems in the industry, focus on problems that you can solve" "Check international agreements and upcoming regulations to find new market opportunities." "Focusing on commercializable ideas, and those who have a current market."
Creativity	Of average importance	"We train interns to do research, we organize competitions within ourselves; we prepare a problem and hold competitions (small hackathons within the company)"

Data coding is not limited to the entrepreneurial competences listed in EntreComp Framework. The entrepreneurial competences that were identified in the interviews but not categorized under any of the 15 competences identified in EntreComp were listed in two separate sheets. The first sheet includes the "Emergent individual level competences" and the second one includes "Emergent resources and capabilities at venture level". The relevant quotes representing the emergent competences were stated as well. Based on how frequently the relevant competence is mentioned in the interviews, the importance of this competence was selected. The importance of the relevant competence is assessed over 5-point Likert scale (5=Absolutely essential, 4= Very important, 3= Of average importance, 2= Of little importance, 1= Not important at all).

Table 3: A sample sheet for the emergent competences at individual level

Competence	Importance level	Quote
Coachability	Very important	"Taking advice and listening mentors are all necessary for entrepreneurs to be successful" "Open to criticism and being coachable" "Open to feedback and self-development. Valuing mentors and investors' insights"

Table 4: A sample sheet for the emergent resources and capabilities at venture level

Competence	Importance level	Quote
Complementarity in teams	Very important	"Complementary skills and balance each other with their personality traits. Experience and knowledge in different managerial areas. Balanced attention to R&D and the market". "You need people with diverse thinking and expertise in the founding team" "Having team members with varied and right skills is essential"

Data analysis stage employed qualitative and quantitative data analysis methods. The data analysis aims to identify the most common entrepreneurial competences and attitudes in each ecosystem and across all ecosystems, and the most efficient paths to acquire these competences and attitudes.

It was an important aspect to carefully prepare data coding and analysis processes to give a good insight into the entrepreneurial competences and attitudes that bring success to startups. To ensure the success of the processes the following steps are followed and emphasized:

- Using the competences identified in the EntreComp Framework as the base of data coding.

- Internal meetings to align with the definitions and scope of the competences.

- Review and feedback for the codes by considering the sample quotes given to minimize the variances in interpretation of codes.

Overview of the sample in each ecosystem

Bulgaria

Successful entrepreneurs

The entrepreneurs surveyed in the study display a wide variety of ages, industries, educational levels, and experience. The majority of surveyed entrepreneurs are in the mid-career (31-40 years) and

established (41-50 years) age groups, each comprising 40%. They are followed by the early career (20-30 years) and senior (51+ years) groups, both at 10% (Figure 2).

According to the industry, the majority of companies are concentrated in the Technology and Innovation sector, making up 28.6% of the total. Healthcare and Biotechnology and Human Resources / App Development each account for 14.3% with two companies in both sectors. The remaining sectors, including Retail and Consumer Goods, Education and Training, Sustainable Energy and Environment, Mental Health Services, Financial Consulting, and Non-Profit / Social Enterprise, each hold a 7.1% share with one company represented in each (Figure 3).

In terms of education, most hold at least one master's degree (90%), followed by those with undergraduate degrees (10%) (Figure 4). Experience levels are evenly spread between novices (0-2 years, 20.0%), experienced (6-10 years, 20.0%), and veterans (10+ years, 20.0%), while those entrepreneurs with intermediate experience are majority (3-5 years, 40.0%) (Figure 5).
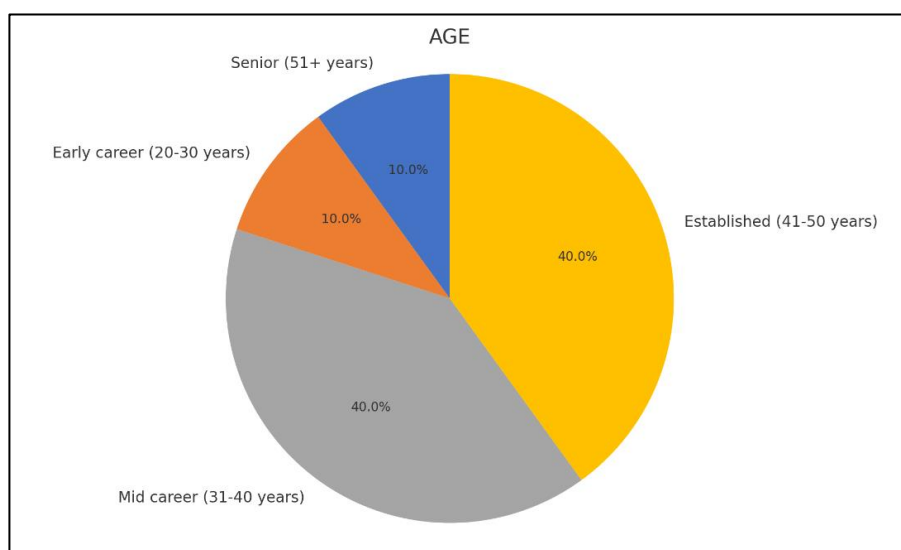
Figure 2: Age Group Distribution of Entrepreneurs
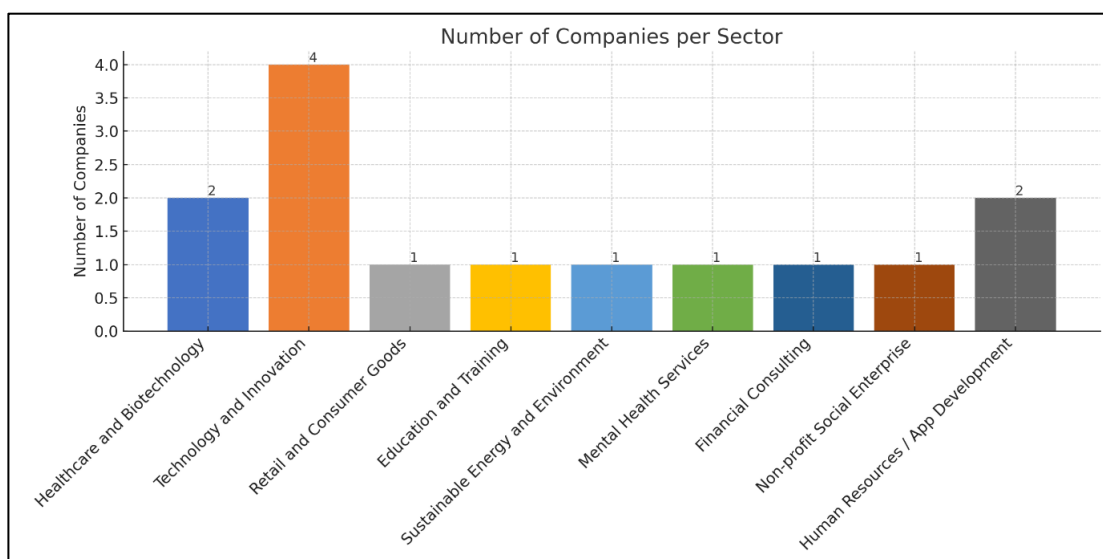
Figure 3: Sector Breakdown of Entrepreneurial Ventures
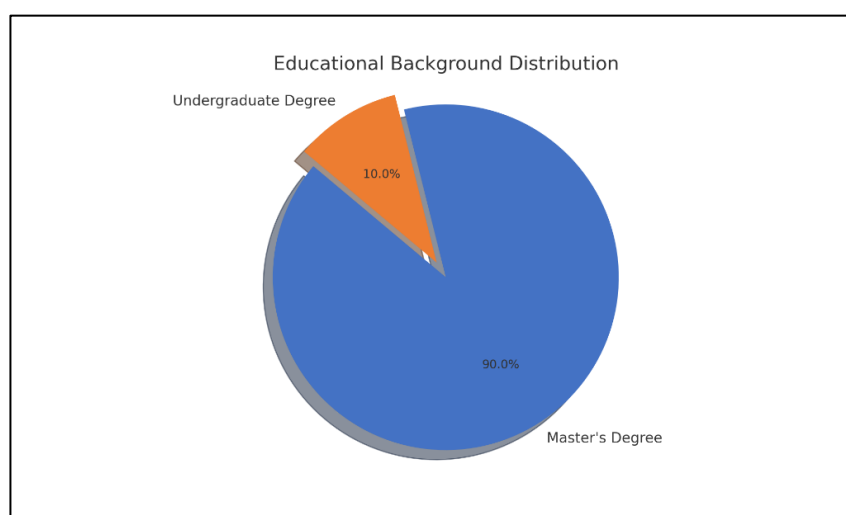
Figure 4: Educational Background of Entrepreneurs
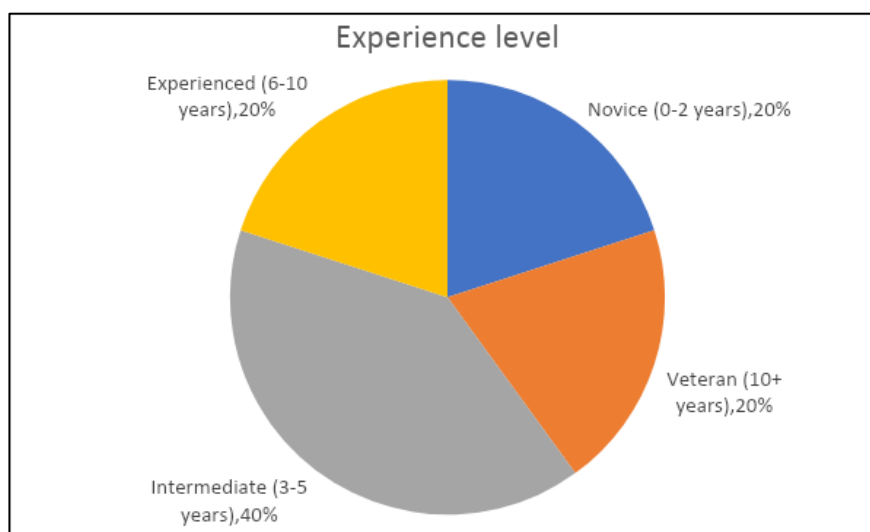
Figure 5: Experience Levels of Entrepreneurs

HEIs, Incubators and Policy Makers

Sofia University's Faculty of Economics and the Technical University of Sofia are two prominent Bulgarian higher education institutions that significantly contribute to the country's entrepreneurial ecosystem. Sofia University, founded in 1888, stands as one of Bulgaria's oldest and largest universities, while the Technical University of Sofia, established in 1945, is renowned for its technical expertise and substantial student body. Both institutions play pivotal roles in fostering entrepreneurship within Bulgaria.

The Faculty of Economics at Sofia University, with its extensive history and reputation, serves as a cornerstone of academic excellence. Its Master's program in Management and Entrepreneurship equips students with the skills and knowledge needed to excel in the entrepreneurial landscape. On the other hand, the Technical University of Sofia leverages its technical prowess to drive innovation and technology-based entrepreneurship. With its Technology Entrepreneurship Program, it provides specialized education and resources that are vital for the growth of technology startups and ventures in Bulgaria. These two institutions, with their long-standing presence and commitment to excellence, are integral components of Bulgaria's entrepreneurial ecosystem.

Sofia Municipality, as the capital city of Bulgaria, is one of the largest policy-making bodies in the country. It is characterized by its significant size and influence, both in terms of population and economic activity. With a large and diverse population, Sofia Municipality plays a crucial role in fostering entrepreneurship and innovation in Bulgaria. It hosts numerous businesses, startups, and institutions

that contribute to the entrepreneurial ecosystem. Moreover, it often takes the lead in implementing policies and initiatives to support local businesses, startups, and technology hubs.

Burgas Municipality, located on the country's Black Sea coast, is relatively smaller in size compared to Sofia Municipality. It has a younger demographic due to its coastal attractions, which draw tourists and offer opportunities for small and medium-sized businesses in the tourism sector. While not as large or influential as Sofia, Burgas Municipality plays a vital role in the regional entrepreneurial ecosystem, focusing primarily on tourism-related businesses and initiatives. It works to create an environment conducive to entrepreneurship in the tourism and hospitality sectors, contributing to economic growth in the region.

The Ministry of Electronic Governance and the Ministry of Innovation and Growth are both national policy-making bodies in Bulgaria. The Ministry of Electronic Governance is responsible for promoting the use of digital technologies and e-government solutions across the country, making public services more accessible and efficient. This ministry plays a crucial role in modernizing and digitalizing the Bulgarian entrepreneurial ecosystem, enabling businesses to thrive in a digital age. On the other hand, the Ministry of Innovation and Growth focuses on driving innovation, research, and development efforts in Bulgaria. It supports startups, research institutions, and technology-driven companies, fostering a more innovative and competitive entrepreneurial environment nationwide. These ministries are essential in shaping Bulgaria's overall policy landscape for entrepreneurship, ensuring that the country remains competitive on the global stage.

France

Successful entrepreneurs

The French entrepreneurs surveyed in the scope of the study are mostly experienced people, with a long track record of achievements. The majority of surveyed entrepreneurs are in the senior (51+ years) group, with a couple of cases in the established (41-50 years) and respectively mid-career (31-40 years) age groups (Figure 6). In terms of experience, all of them are positioned in the veterans category, having thus a professional experience of 10+ years in various industries.
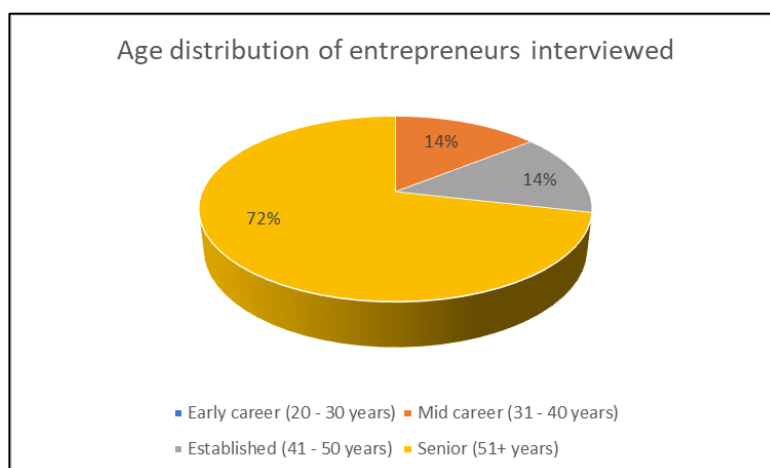
Figure 6: Age distribution of entrepreneurs interviewed

The industry distribution of the entrepreneurs having participated in the interviews is highly heterogeneous, with companies in domains ranging from Biotechnologies to Robotics, Banking, Web to Fashion. In terms of education, all entrepreneurs hold a higher education degree, equivalent to the Master level.

HEIs, Incubators and Policy Makers

The following universities and HEIs were interviewed in the scope of the task activities:

The Entrepreneurship Center of the ESSEC Business **School** offers an array of services including teaching, coaching, incubation, and networking opportunities for students interested in entrepreneurship. The programs cover diverse courses, from introductory classes to hands-on workshops, guiding students through venture projects, business planning, and ultimately leading to the application for the incubator.

Representatives of the following public authorities were interviewed in the scope of the task activities:

The Nice Greater Region, home to approximately 500,000 residents, boasts a diverse economic landscape beyond its renowned association with tourism. With over 80,000 active companies, the region is characterised by a robust business culture and is witnessing a shift towards various industries. Notably, sectors such as health, eco-industries, technology, and cultural domains have emerged and grown within the region. The region strives to redefine the area's image, emphasising its evolution from being solely a tourist hub to a multifaceted business and innovation centre. This transition has been evident with the

emergence of diverse industries, including health-focused enterprises, technological advancements, and cultural pursuits, all contributing to the region's economic evolution.

Valence Romans Agglo spearheads a comprehensive approach to driving economic growth and innovation within the region. His leadership encompasses a strategic vision that encompasses various pillars of economic development, such as innovation, employment, higher education, and the robust support of entrepreneurial endeavours. The region's commitment to a multi-faceted economic strategy is evident through its proactive participation in nationally recognized programs and the attainment of prestigious labels, notably the "FreshTech in the Alps" and "territoire d'innovation" awards. These acknowledgments underscore the region's proactive approach and recognition on both national and international fronts for its dedication to innovation and economic progress. Valence Romans Agglo's initiatives reflect a forward-thinking approach, evident in its collaborations and partnerships. The region actively engages with alliances such as the FreshTech Alpes and the Arché group, strategically focusing on both technological innovation and social innovation. The emphasis on "impact companies" demonstrates the region's foresight in recognizing the significance of businesses that prioritize societal impact alongside economic growth. This dual focus acknowledges the shifting landscape of innovation, where sustainability, societal contributions, and environmental responsibility are becoming increasingly crucial, complementing traditional technological advancements.

Greece

Successful entrepreneurs

The surveyed entrepreneurs in the study present a diverse range across age groups, sectors, educational backgrounds, and levels of experience. The majority are in their early career stage (20-30 years, 41.7%), followed by established (41-50 years, 25.0%), mid-career (31-40 years, 16.7%), and senior entrepreneurs (51+ years, also 16.7%) (Figure 7). Sector-wise, the largest group operates in Healthcare and Biotechnology (33.3%), with equal representation across Agriculture and Food Industry, Technology and Innovation, Retail and Consumer Goods, Transport and Logistics, Manufacturing and Production, Education and Training, and Sustainable Energy and Environment (each at 8.3%) (Figure 8). In terms of education, most hold a doctorate (58.3%), followed by those with graduate degrees (25.0%) and undergraduate degrees (16.7%) (Figure 9). Experience levels are evenly spread between novices (0-2

years, 41.7%), experienced (6-10 years, 25.0%), and veterans (10+ years, 25.0%), with a smaller portion in the intermediate category (3-5 years, 8.3%) (Figure 10).
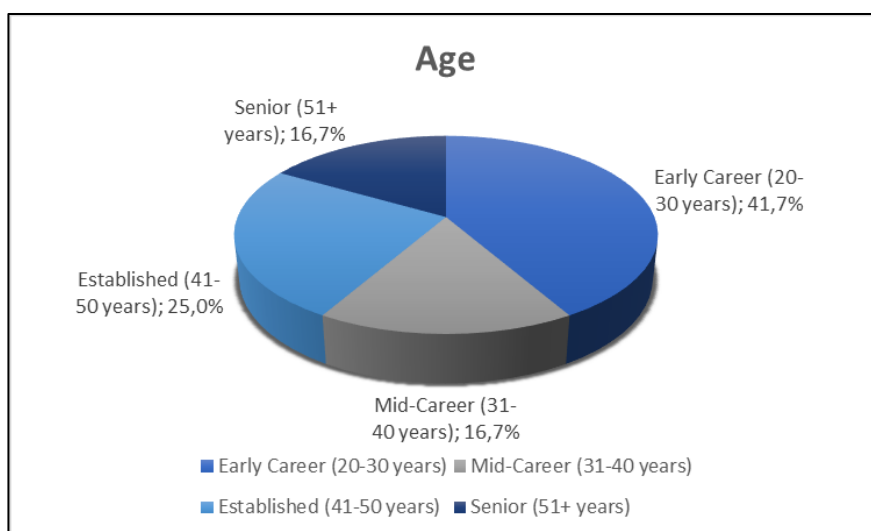
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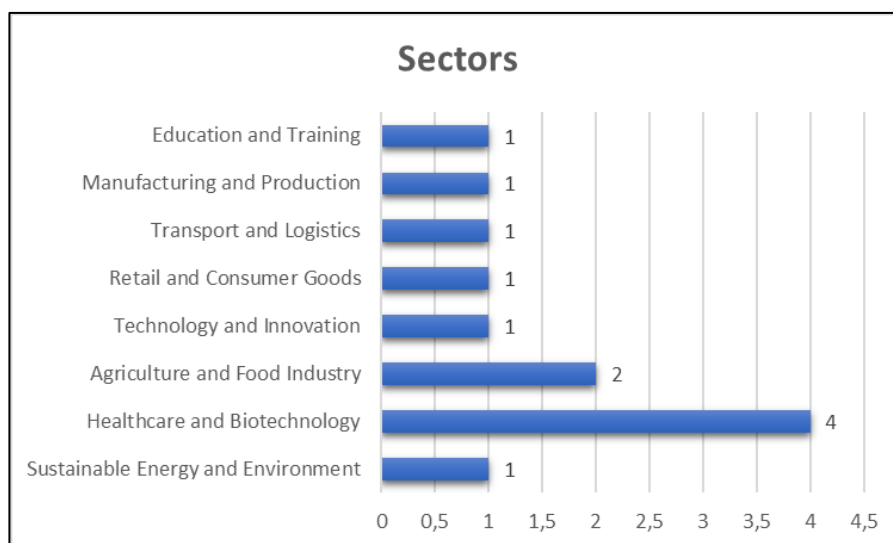
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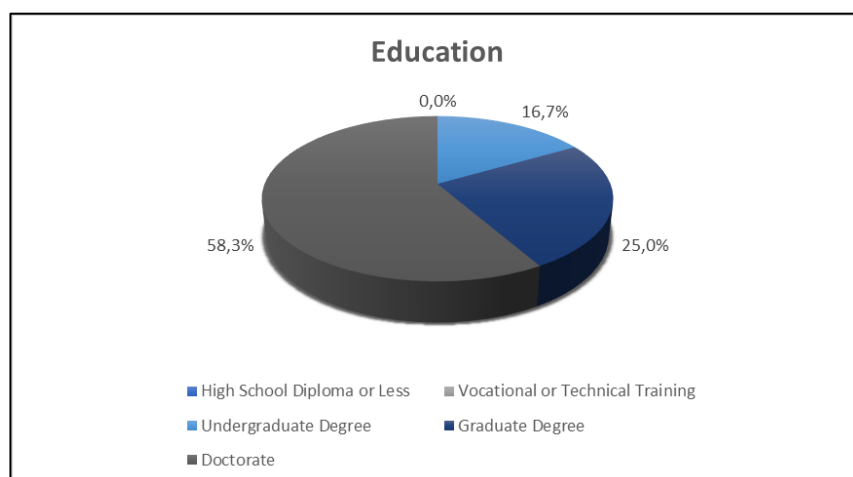
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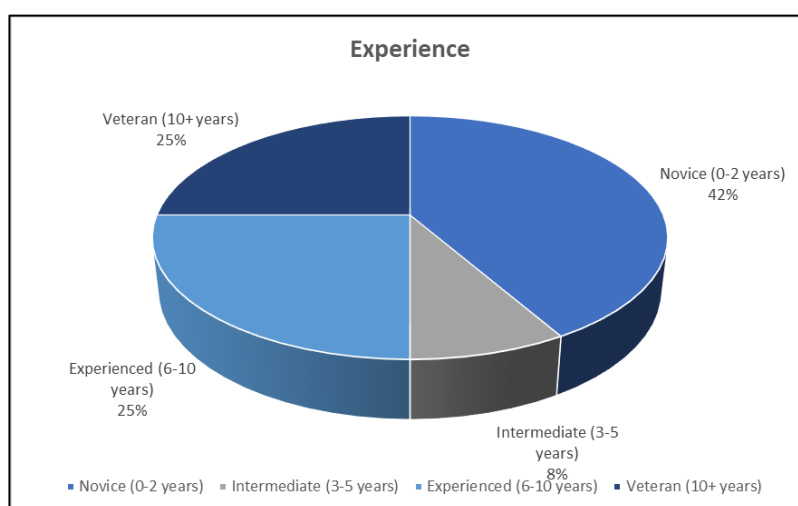
Figure 10: Experience Levels of Entrepreneurs

HEIs, Incubators and Policy Makers

The Department of Business Administration at University of Thessaly, located in Larissa and established in 2019, is part of the School of Economics and Business. It aims to provide comprehensive scientific knowledge in business management through its undergraduate program. This program, integrating both qualitative and quantitative approaches, prepares graduates for executive roles in various organizations or for further postgraduate studies. The department's focus is on understanding and optimizing the effectiveness and efficiency of business organizations in the modern environment.

The Association of Industries of Thessaly & Central Greece (SBTSE), established in 1966, started as an association of 22 entrepreneurs in Volos, Thessaly, covering the regions of Karditsa, Magnesia, and Trikala. Its initial purpose was to protect and promote the economic, moral, and professional interests of its members and to support the industrial development of Thessaly through study and scientific research. Over time, as it included more industries, SBTSE adapted its goals to the changing socio-economic landscape, focusing on improving industry-state cooperation, promoting private initiative for regional prosperity, and defending the freedom of entrepreneurship.

The Association of Thessalian Businesses and Industries (STHEV), founded in 1957 as a non-profit private law association in Larissa, represents the vibrant cell of economic activity, the enterprise in Thessaly. It has established itself as a respected social partner significantly contributing to creating conditions favorable for business activity and overall economic growth. STHEV's services are multi-faceted, focusing on representation and support, research and innovation promotion, export promotion, education, information work, networking, and business solidarity.

Ireland

Successful entrepreneurs

The demographic analysis of respondents revealed a predominant age range of 40-50, with a majority having previous affiliations with larger corporate entities or possessing substantial experience in research or business development. The interviewees featured a Communication Degree and a PhD, along with diverse specialized courses, and hands-on experiences that collectively shaped their entrepreneurial competences.

The sectors they represent are, indeed, varied; HR, data protection, National Security, cyber management, Artificial Intelligence (AI). Despite the diversity in their professional backgrounds, a unifying theme is that none of the interviewees had prior experience with the entrepreneurial journey. However, a shared attribute among them was their notable resilience and perseverance.

HEIs, Incubators and Policy Makers

There is a national entrepreneurial development programme called New Frontier Programme that offers early-stage entrepreneurs innovative business ideas poised for scalability and employment generation. This initiative equips participants with the requisite skills, support, and confidence to transition into

establishing successful businesses. Implemented on behalf of Enterprise Ireland, this program is conducted in collaboration with Institutes of Technology and Technological Universities across 13 universities with 18 locations.

As one of the implementers of the New Frontier Programme, both TU Dublin and Trinity College are also one of the pioneer actors in entrepreneurship in education, offering Post-graduate courses: TU Dublin in Business and Entrepreneurship and Trinity College in Entrepreneurship and Innovation.

Delving into the specifics of the Irish entrepreneurship ecosystem, another distinctive hallmark made by the interviewees is the collective collaboration among various stakeholders. Some of the incubators find their homes within universities as mentioned above, along with a large number of independent centres contributing to the expansive network. Respondents emphasized the existence of multifaceted collaborations between universities and incubators, strategically designed to cater to the unique needs of entrepreneurs, startups, and spin-offs.

Trinity College exemplifies these collaborative motivations by relocating a research team to another incubation centre, driven by the latter's enhanced resources and responsiveness. Another example is the case of Dogapatch Lab that is an independent incubation centre. The centre carries out an NDRC national accelerator programme since 2020 indicating a striking case for cooperation between incubation and policy makers that in return supports the entrepreneurs. Such adaptive strategies underscore the dynamic interplay among Higher Education Institutions, Incubators, and Policy Makers, highlighting a mutual effort to foster a robust entrepreneurial landscape in Ireland.

Within the interview sessions, interviewees representing incubation centre highlighted that start-ups that graduated from the incubation centre always come back for supporting the newcomers and participate their workshops to inspire ambitious or somewhat puzzled entrepreneurs. These cases also unveiled the solid commitment of all ecosystem actors to community welfare, regardless of their status as multimillion-dollar company owners. This dedication to societal impact emerged as a focal point, underscoring the motivation and great support mechanisms in Ireland that pervade the entrepreneurial ecosystem.

Turkiye

Successful entrepreneurs

The entrepreneurs surveyed in the study present a diverse range across age groups, sectors, educational backgrounds, and levels of experience. The majority are in their early career stage (20-30 years, 60%), followed by mid-career (31-40 years, 20.0%), established (41-50 years, 10.0%), and senior entrepreneurs (51+ years, also 10.0%) (**Error! Reference source not found.**1). Sector-wise, the largest group operates in Information and Communication Technologies, focusing on diverse customer groups with different products. This is followed by ventures who are manufacturers of materials and electronics. There is also one online retail shop in the segment (Table 5). In terms of education, most hold an undergraduate degree (60.0%), followed by those with master's degrees (30.0%) and doctorate degree (10.0%) (**Error! Reference source not found.**2). Most of the interviewed entrepreneurs have 6-10 years of experience (50.0%), followed by veterans with 10+ years of experience (30.0%), and an intermediate level of 3-5 years of experience (20.0%) (**Error! Reference source not found.**3).
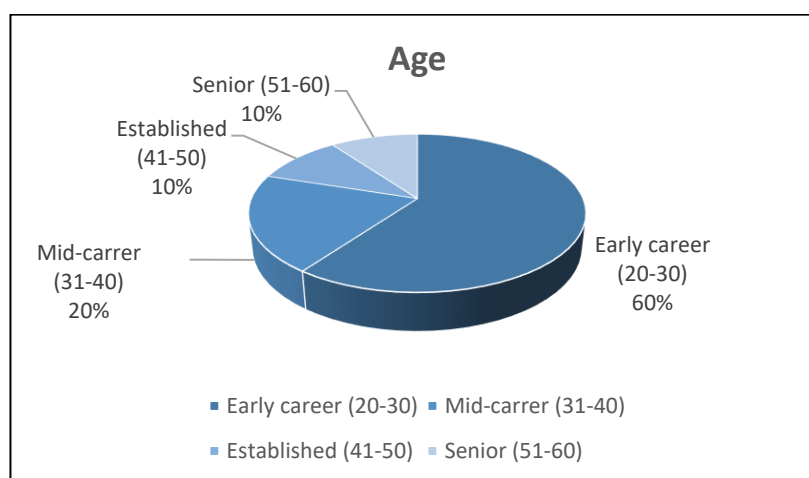
Figure 11: Age Group Distribution of Entrepreneurs

Table 5: Sectoral breakdown of entrepreneurial ventures

Sector	Product/Service
ICT- Computer programming	Education software
ICT- Computer programming	Management software
ICT- Computer programming	Cybersecurity software
ICT- web-portal	Volunteering
ICT-data pocessing	Online retail support
Manufacture of electronic products & ICT-computer programming	Robotics software & robots
Manufacture of electrical equipment & ICT- computer programming	Agriculture software & electronics
Retail sale of food on internet	Online sales portal
Manufacture of synthetic material	Diamond
Manufacture of plastics	Bio-based plastics
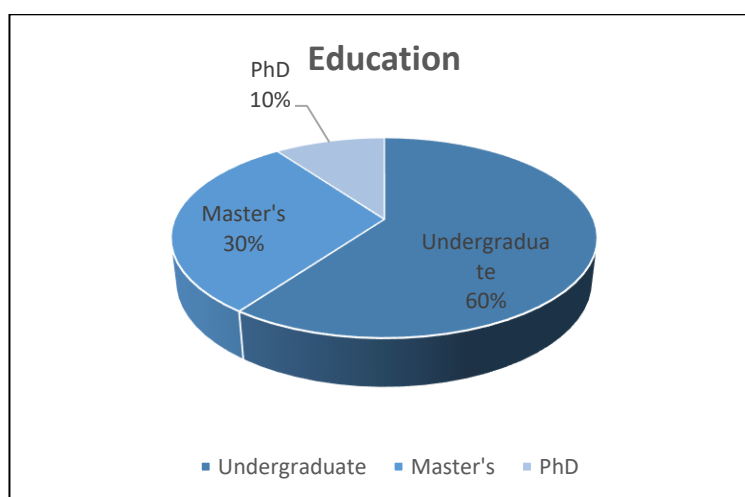
Figure 12: Educational Background of Entrepreneurs
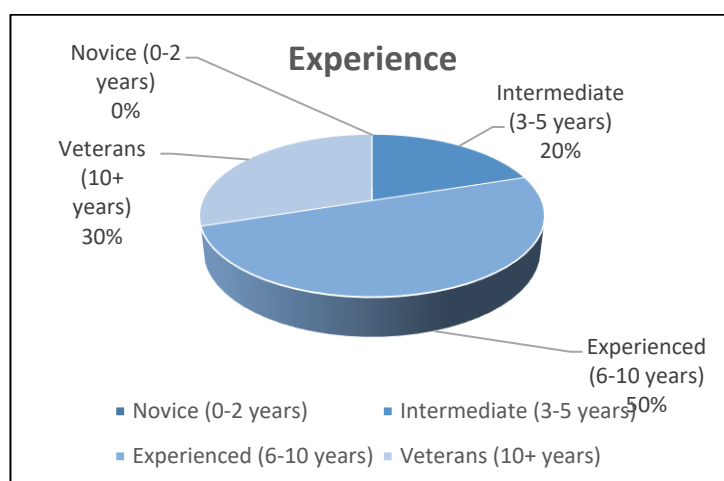
Figure 13: Experience Levels of Entrepreneurs

HEIs, Incubators and Policy Makers

Özyeğin University (Istanbul) is the first university providing entrepreneurship undergrad diploma programme. The university has also an acceleration program established in 2010. The university offers entrepreneurship education and training through three channels. One is the formal university education and diploma courses on entrepreneurship. The second is the entrepreneurship trainings provided by the acceleration program and the third channel is the university's unit for lifelong education. Besides diploma programmes and short-term trainings, there are active students club for entrepreneurship and maker lab. Sabanci University has been ranked second in the Innovative and Entrepreneurial University Index across Turkiye and ranked first among the universities in Istanbul. The university provides students with Entrepreneurship Minor Diploma programme and various courses on entrepreneurship and innovation. Every year more than 200 students register these entrepreneurship courses. Sabanci University has MBA programs for professionals and provides more specialized master programs such as Master in Finance, Master in Marketing. The university has a special unit, Inovent which aims to support startups, especially those created by Sabanci University academics and students, and provide some seed investment. Inovent also run programs under TUBITAK BIGG. The university also run incubation and acceleration programs under the name of SuCool, recently a new incubation centre at the campus was launched. The third university is a foundation university in Istanbul. It was established approximately 25 years ago. It provides diploma programs in various fields including engineering, healthcare and

medicine, business, law, educational sciences. Master programs designed for executives and professionals are one of the strengths of the university.

Incubation programs are both in Istanbul and operate as affiliated to universities. One affiliated to a large public university and the other one is affiliated to a foundation university founded approximately twenty years ago. The first one operates in a university technopark hosting more than 500 R&D companies and more than 8000 qualified R&D personnel in a wide range of sectors such as software development, ICT, telecommunications, electronics, pharmaceuticals, machinery and equipment manufacturing, chemistry, aviation, energy, defence industry, construction, and food. The incubation centre offers several programs including preincubation, incubation, TUBITAK BIGG, games hub, fintech, urban mobility, and insurtech. The second one has become one of the implementing agencies of TUBITAK BIGG program and pursued a technopark application to the Ministry of Industry, Technology and Innovation. The incubator also has a pre-incubation program to support idea stage entrepreneurial teams. Incubation program contains 40 startups which have already launched their products, but been looking for seed investment or Series A investment for growth. The incubator also provides various opportunities to startups for internationalization. They are in collaboration with incubation and acceleration programs in various European regions.

The foundation of the policy making public organization dates to the mid-of 1960s. However, the unit focusing on entrepreneurial support was founded in 1990s. The unit coordinates various programs targeting the support of various actors of innovation and entrepreneurship ecosystem and their collaborations. The programs support 147 institutions across Turkey to encourage entrepreneurial activities. All these institutes enable the spread of know-how across the innovation and entrepreneurship ecosystem.

Ukraine

Successful entrepreneurs

During the research, the average age of the respondents ranged from 35 to 50 years old. Half (35-50) of the respondents are experienced professionals, serial entrepreneurs with a wealth of knowledge and experience in line with their age. The other half (22-35) are young entrepreneurs with a high level of ambition to make a difference for better. These are effective entrepreneurs who are able to take risks, learn quickly, adapt and adjust to change.

As for the sectors of activity of entrepreneurs, they are all diverse: Fintech, Real Estate Management, Operations, HR, Agritech, Medtech, Biotech, Artificial Intelligence, Big Data. No matter what sector the interviewed entrepreneurs do business in, the psychological profile and mindset of each of them lends itself to analogy. They all share many common prejudices about doing business and about life in general.

HEIs, Incubators and Policy Makers

In terms of education, most of the respondents have completed an MBA program, have a master's degree or several higher education degrees. Mostly in such sciences as management, economics, and law. The level of experience is divided into beginners (2-5 years) and experienced businessmen (>10 years).

Analysis of the Entrepreneurial Competences

Bulgaria

Competences in the EntreComp Framework

Table 6: Manifestation of EntreComp Competences in the Bulgaria Context

Competence	Importance	Quotation
Spotting opportunities	Absolutely essential	*Every challenge we face is an opportunity in disguise. It's all about perspective. Interesting turn of events made me a self-taught entrepreneur. With determination and innovation, such as introducing an SRM system and amplifying marketing efforts, I overcame these obstacles. I've always had this enduring idea from my university days that we needed to innovate the construction industry. Entrepreneurship is something you carry with you. Innovation isn't just about technology; it's about changing the hearts and minds of people.* *…believe in the power of intuition and the importance of swift decision-making. There's just so many things in which a person without technical skill, no coding skill can contribute at a HACKATON. There's just so much to business besides coding that there is always something to do if you're non-technical as well.*
Creativity	Of little importance	*The key challenge is not finding this product market fit, really not understanding the market. Many startups don't do this at all.*

Vision	Very important	*A commitment to social impact goes beyond financial goals.*
Valuing ideas	Very important	*The key challenge is not finding this product market fit, really not understanding the market. Many startups don't do this at all. Early validation through market conversations is essential before embarking on product development.* *I've always believed that understanding the root of a problem is the first step to creating impactful solutions.* *I love the concept of MIT about disciplined entrepreneurship, about starting with the pain points, about making sure that your design thinking essentially start implying with the client and making sure you build for a real pain point. And not just for what you believe.*
Ethical and sustainable thinking	Of little importance	*A commitment to social impact goes beyond financial goals.*
Self-awareness and self-efficacy	Very important	*Understand your purpose and always strive for excellence.* *I believe that one has a calling in this life and the earlier he finds it, the better... For me urgency makes a difference.* *I've been a self-starter and with very high execution standards all my life. My first venture went live because there was energy, there was urgency, there was a deadline, there was accountability.*
Motivation and perseverance	Absolutely essential	*The great achievements are yet to come, and we hope to add one great achievement every month!* *Focus on the long-term goals by not letting temporary failures demotivate you. Do not give up when you face challenges.* *This is where we want to be: Asking 'why' and having products that prove it. If you have a burning desire in what you are doing and keep pushing for progress everyday things start happening.* *The optimism of the entrepreneur is needed, because otherwise he will not start at all when realizes how many things there are to happen.* *"… (they) should stay hard, and once it comes just have to grit their teeth and continue"* *Embracing optimism and resilience is crucial in navigating the challenges of entrepreneurship.* *It's not about how many times you fall, but how many times you get back up and keep moving forward. Celebrate success.*
Mobilising resources	Very important	*We were 1 company that took an investment from the venture capital fund Eleven... and then we also took a little more additional funding from several business angels…*
Financial and economic literacy	Of average importance	*I recognize the importance of understanding topics like accounting and marketing.* *We used an incubator, which was "an eye-opening": I learned what equity is, how do you divide the company shares…*

Mobilising others	Absolutely essential	*Perhaps the biggest difficulty was to explain our idea to people. I apply skills acquired from previous experiences, like communication, sales, persuasion, and leadership, in my current business. As a new and unrecognized company, we had to spend a lot of effort to find new clients and build trust with them. A key factor in my decision to become an entrepreneur was finding the right business partner. We used an incubator, which set the foundations of our business. As a new and unrecognized company, we had to spend a lot of effort to find new clients and build trust with them. Most leadership qualities can be acquired through certain trainings including the way to communicate with your team, how to create positive work environment, how to encourage creativity and initiative, and many others*
Taking the initiative	Of average importance	*I wanted to be independent and to create according to my values and preferences. Dream big, start small, but most importantly, start now. I've been a self-starter… all my life. A critical lesson I learned was the importance of delegating responsibilities within the company.*
Planning and management	Very important	*One of the biggest mistakes I've seen is that some entrepreneurs are so 'in love' with their original idea that they don't want to make the slightest correction. I think we are different in that we are smaller, but more flexible. Success demands flexibility and adaptability in various business models. When you set yourself tasks, you need to complete them, not start 10 and leave each of them is 10% complete. This does not lead to anything good.*
Coping with uncertainty, ambiguity, and risk	Absolutely essential	*Do not give up when you face challenges. It's not about how many times you fall, but how many times you get back up and keep moving forward. …believe in the power of intuition and the importance of swift decision-making. Entrepreneurs should have the courage to make decisions, understanding and accepting the associated risks.*
Working with others	Very important	*My biggest challenge was the co-founder. Success is result of the team effort. Leveraging personal connections can be invaluable.*

Learning through experience	Absolutely essential	*Treat failures as lessons learnt that make you better. Working in a small company can really serve as a training experience for a lot of entrepreneurs.* *We used an incubator, which set the foundations of our business and was "an eye-opening": I learned what equity is, how do you divide the company shares, learned about conducting surveys, talking to customers way before you have the product.* *Challenges are inevitable, but they're also the best teachers. Embrace them.* *I value feedback and continuously improve based on client reviews.* *It is important to seek feedback…* *Entrepreneurship…requires constant learning.* *I learned what equity is, how do you divide the company shares, learned about conducting surveys, talking to customers way before you have the product.* *Engaging in extracurricular activities at school and university helped me push beyond conventional boundaries.*

Emergent Competences

Table 8: Emergent Competences in the Bulgaria Context

Competence	Importance	Quote
Having diverse Interests	Of little importance	*Engaging in extracurricular activities at school and university helped me push beyond conventional boundaries.*
Technical skills / Domain-specific skills	Of average importance	*Understanding of one's domain is really important.*

The data on Bulgarian entrepreneurs' competencies, based on the EntreComp Framework, categorizes essential skills into three groups: EntreComp Competences, Individual Level Competences, and Venture Level Resources and Capabilities.

EntreComp competencies considered "Absolutely Essential" include spotting opportunities, motivation and perseverance, mobilizing others, coping with uncertainty, ambiguity, and risk, and learning through experience, emphasizing the importance of resilience, strategic thinking, and practical learning. "Very Important" competencies involve vision, valuing ideas, self-awareness and self-efficacy, mobilizing resources, planning and management, and working with others. Additionally, technical and domain-specific skills are seen as moderately important, indicating a balanced approach between specialized knowledge and general entrepreneurial skills.

Overall, the data shows a strong emphasis on practical, action-oriented skills among Bulgarian entrepreneurs, with a notable lesser importance placed on creativity and ethical considerations. This could reflect specific market conditions or cultural influences in the Bulgarian business environment.

France

Competences in the EntreComp Framework

Table 8: Manifestation of EntreComp Competences in the France Context

Competence	Importance	Quote
Spotting opportunities	Of average importance	*You need to have good partners and you need to have good people to talk to and ask questions. My job is to ask questions to everybody. There are no borders in science, it's the same in life. I learn from an entrepreneur point of view.*
Creativity	Of average importance	*I was interested in writing, mixing it with images to create content and to tell stories to people.*
Vision	Very important	*I started this company thanks to a dream. Never look behind you, just always look ahead. Entrepreneurship is … to have a vision of the world and … to be really political as well. It is really important to have an overall vision of where you want to go but be flexible in terms of how you're going to get there. An entrepreneur's success is not solely dependent on domain expertise but rather on a comprehensive skill set that incorporates effective communication, adaptability, a visionary mindset, and an entrepreneurial spirit geared towards continuous learning and evolution. We need to find the skills that will enable us to have this global vision of entrepreneurship.*
Valuing ideas	Very important	*The most important is to have an original idea at the beginning, an idea that solves a real problem. Developing a great idea will allow solving other business issues (operational, financial, and the like). Entrepreneurs need to select the right idea, that an entrepreneur is passionate about, and the one solving a real pain. An entrepreneur should start with the problem, then trying to find a solution, shaping it according to the market feedback.*

Ethical and sustainable thinking	Very important	*Stay yourself, meaning doing your business according to your values. The most important thing is not to be the leader of your market or to be the best. The most important thing is to do what you want to do.* *Be honest and transparent.* *If you think that your idea will have an ecological impact, you have to fight for it.*
Self-awareness and self-efficacy	Very important	*My father was from Romania and Hungary … and he arrived with nothing in France and I saw him become a successful entrepreneur.* *Knowing one's strengths and weaknesses, being realistic about one's knowledge, and seeking help in areas of limitation.*
Motivation and perseverance	Absolutely essential	*It is very important to resist failures, and to be able to continue after them, to be able to learn from your mistakes.* *Always learn from your mistakes.* *The main point, in fact, … is the energy of the founder.* *You always make mistakes when you're an entrepreneur, learning from mistakes is difficult as it only involves your personal judgements and experience.* *Endurance and persistence in the face of setbacks, essential for navigating the unpredictable journey of entrepreneurship.* *Resilience is probably the difference. Some give up easily, others do not. It's a key trait for entrepreneurs to succeed.*
Mobilising resources	Of average importance	*French start-ups have problems with finding money for scaling-up*
Financial and economic literacy	Very important	*It's really hard to finance a deep tech industrial startup. And it's even harder when you're a solo female founder.*
Mobilising others	Not important at all	
Taking the initiative	Not important at all	
Planning and management	Very important	*When I created my business I wrote my goals for three years, five years and ten years. So I had a red line and I always keep this red line. Goal setting and keeping to the plans is important.* *Planning your business activities in France is quite tricky in the beginning, when many processes depend on the administration, which is unpredictable in its own way.*

Coping with uncertainty, ambiguity, and risk	Absolutely essential	*You always live with doubting, you have to adapt permanently to change. The ability to adapt and be flexible without losing focus are essential for entrepreneurs.* *Entrepreneurial risks and stress demands a lot of energy and determination.* *… the most essential trait of an entrepreneur is risk taking. Encouraging a culture of risk-taking and innovation remains a crucial challenge. This involves not only fostering an environment conducive to risk but also promoting an ecosystem that rewards experimentation and accepts failures as part of the entrepreneurial journey.*
Working with others	Absolutely essential	*Being able to build teams and manage people is one of the essential characteristics of a successful entrepreneur. It is essential to have a skill to assess whether you can trust people or not; building a successful and loyal team is a big challenge.* *It is very important to learn to delegate professional roles to team members and offer professional training to know new subjects.* *The whole entrepreneurship mission is coming from my experience and the experience I have collected from different people around me, from my teams.* *I have to manage … a balance between the desire for new features, innovations and technologies developed by my team… and needs of the customers.* *The main challenge is not hiring people … but building a team. The company one starts is a collective adventure with a big challenge to find the right people who will want to develop your project with you.* *The main factor of failure in startups is the dismantlement of the teams.* *The ones who fail are the ones who don't want to share.*
Learning through experience	Very important	*The best school for me … is real experience, real life.*

Emergent Competences

Table 9: Emergent Competences in the France Context

Competence	Importance	Quote
Capacity to continuously learn.	Very important	*The will, the knowledge and the money: if you don't have the three gems, don't go.* *Entrepreneurs always need special knowledge and competences, hence the importance of studying.* *You have to train yourself all the way along. Continual learning and adaptability remain central to an entrepreneur's success, enabling them to face challenges and navigate the dynamic business landscape effectively.*

Open mindedness, the capacity to listen	Very important	*The ability to listen intelligently and selectively, to be proactive in decision-making, and to effectively lead and bring others along on the entrepreneurial journey is pivotal.*
Confidence	Very important	*A successful entrepreneur should always have trust in him/herself and his/her cause.*
Other soft skills	Very important	*You need to have a minimum knowledge in terms of soft skills.*
Wholistic perspective	Very important	*Those entrepreneurs, who only have a product prism, fail.*
Getting access to scaleup funding	Very important	*French start-ups have problems with finding money for scaling-up.*
Focusing on social/societal impact	Very important	*The importance of launching a project with social impact: the perfect way is to start a project that has public awareness.*
Efficiently acquiring entrepreneurial skills	Very important	*A lack of easy-to-follow and available entrepreneurial education as scientists do not have time for full-time MBA education.*
Knowing the customers	Very important	*Product validation and its deployment to the market are tricky, and if not done correctly could seriously hinder the process of scaling-up. The common mistake is to try and have something perfect before trying to sell it.*

In most cases, the vision, ideas and creativity are considered implicit, they are perceived as the foundations of successful entrepreneurship. However, among the "Absolutely essential" competences, the French entrepreneurs perceive:

"Motivation and perseverance" as challenges and sometimes failure are considered to be a core part of the entrepreneurial experience and thus the resilience capacity, the willingness to learn from one's mistakes and pursue the achievement of the vision and goals in an agile and flexible way are considered fundamental.

"Working with others" is also one of the essential skills for both the internal activities of the startup and the interactions with the customers and the broader ecosystem. On the one side, as the entrepreneurs does not have all the necessary skills or time to accomplish all the tasks within the startup, creating a motivated team to pursue her/his vision is fundamental to succeed. At the same time, establishing

harmonious collaborations with the ecosystem members, and in particular understanding the key needs of the customers is fundamental to successfully commercialize the startups' products or services.

"Coping with uncertainty, ambiguity, and risk" is also essential as entrepreneurship will put the founders in unexpected situations and they consider vital to remain open minded, to grasp all the emerging situations as opportunities for learning.

In addition to the three essential competences highlighted above and acknowledges almost unanimously by the interviewees, the entrepreneurs also mentioned several other competences from the EntreComp framework as being "Very important". Among them, the Vision, Valuing ideas, Ethical and sustainable thinking, Self-awareness and self-efficacy, Financial and economic literacy, Planning and management and Learning through experience are the ones acknowledged by some of the interviewees according to their personal experience.

Greece

Competences in the EntreComp Framework

Table 10: Manifestation of EntreComp Competences in the Greece Context

Competence	Importance	Quotation
Spotting opportunities	Of average importance	*We had the misfortune—and perhaps the fortune—of experiencing a crisis for ten years.* *They take advantage of opportunities; they have eyes and ears open to find anything out there that can help them achieve their goal. Entrepreneurship means change and innovation, keeping my eyes open and my mind ready to seize the opportunity.* *A successful business is never stagnant... It's always observing and seeking the new in every aspect... It's constantly in motion.*
Creativity	Of average importance	*I see a conventional process on how someone drafts a business plan; we are a bit more unconventional about it.* *It's about allowing entrepreneurial culture to seep through every layer, transforming researchers into entrepreneurs, and fostering a symbiotic relationship where entrepreneurs also value and trust the academic insights of the university.*
Vision	Absolutely essential	*Believe strongly in your idea, but step outside of it and see it from an external perspective.*
Valuing ideas	Absolutely essential	*I didn't get help from anywhere. I just started looking to see what was out there, at least in Greece.* *No one is interested in your product. The biggest challenge is how to make the world out there interested in what you do, how to convince the market to buy your product.* *If you want to have a real impact in the economy and in society, you have to go outside the borders of the capital.* *It's not enough to just love what you want to do, you also need to see how it resonates with others.*
Ethical and sustainable thinking	Very important	*We support entrepreneurs who are not doing it to buy a Lamborghini; they're doing it to help move the economy forward and create jobs.* *We've had two teams that had exceptional ideas, but due to a lack of ethos, they couldn't even unify their team, so how would their business function?*
Self-awareness and self-efficacy	Of little importance	*The biggest challenge is yourself.*

Motivation and perseverance	Absolutely essential	*Committing to the entrepreneurial journey is in itself the most successful thing someone can do.* *The goal isn't so much about the business side of things; that wasn't the aim. My motivation was to show my students the possibility of understanding that there is a path they can follow.* *You can't rush things. It's crucial to find what you love and see your work not as a job but as something fulfilling.* *There are memoranda of cooperation with several entities and new collaborations are being prepared... The idea is to give our students the flexibility to enter the market, to try new things.* *I've never once said I'm bored, you can't be bored in this journey.* *My inspiration came from our father, who is also an entrepreneur. From a very young age, he encouraged us to find our passions and pursue them.* *The problem you're solving should be something you're passionate about. If you venture into a domain you don't love, it's a waste of time.* *Passion for what you do, combined with patience and perseverance, will lead to continuous improvement and eventually success.* *If you do not have passion and are not restless, you will not succeed.*
Mobilising resources	Very important	*It's very challenging for someone to start without any support.* *Sure, you decide you're going to start a company, but then you're faced with the reality that you need to sort through 25,000 papers and have countless discussions with accountants and lawyers.* *If I could turn back time, I would seek professional support earlier. I would probably approach an incubator linked to the industry.* *The risk is certainly yours, but now there are structures in place so you're not starting all this on your own. You're not alone.*
Financial and economic literacy	Of little importance	*A start-up business operates at a different pace, devours money on a daily basis, money that it does not have and must acquire through investment.*
Mobilising others	Of little importance	*The hard part is to convince the funds and individual investors that their idea is worth it in order to receive funding.*
Taking the initiative	Of average importance	*When you succeed in excelling a big company with your services, you can excel in everything.* *I told myself, 'Look, this has been on your mind for so long. You have to make it happen'.* *Steps should be taken carefully but quickly.*

Planning and management	Absolutely essential	*The challenge is to maintain a steady course and ensure that it's not just a fleeting endeavour.* *The idea alone is not enough.* *Our success is that whatever we do seems to be in the right direction. Everything we do is well-calculated and appears to yield results. The big step was to get out of the comfort zone of university and move into entrepreneurship.* *As we started entering industries, the concept of the company underwent a complete transformation.* *Entrepreneurship demands diverse skills, from tech expertise to business savvy. For a programmer accustomed to isolation, stepping into this multifaceted role can be a daunting transition.* *And a great truth was told, the British, they say, are formal and don't want you to stress them, on the other hand, we've been trained in Greece to do things at the last minute.*
Coping with uncertainty, ambiguity, and risk	Absolutely essential	*There should be no haste, no possibility of error. Production carries a huge responsibility.* *The earlier you start, the less you are afraid of danger. There's no simple 'I had an idea and executed it' narrative here; there are no straight linear paths.* *This is how you ultimately emerge as a well-rounded entrepreneur. Give it a try, embrace setbacks, and if luck favours you, you'll move forward. But remember, most fail along the way.* *The hardest thing we did was present the product in front of the client and just before we hit the button to start, everyone was there waiting. Consider the best and worst-case scenarios—can you manage both? Make a decision about your risks.*
Working with others	Absolutely essential	*Talk to 10 people for whom you are solving a problem. Go and talk, understand what the need is, see who the surrounding stakeholders are that you're communicating with. Always take a step back and see the bigger picture.* *I would like to train students who know both how to manage and to be managed. You will find yourself on both sides at different phases of your life. I've seen people who don't make it, because they don't succeed in the team. They try to overshadow the other members of the team, conflicts arise, and the project ends no matter how good it may be.* *Reach out to an existing network of like minded people and talk, talk, talk about your idea.* *There are some hidden centres of excellence, meaning you won't see them anywhere, there are just people with passion, they have a desire to make things that have the potential to reach out and touch something else. Startups offer a valuable platform for personal and professional growth, opening doors both within and outside the startup ecosystem.*

Learning through experience	Absolutely essential	*Negative criticisms can be harsh, but having a radar to listen to third parties is essential.* *Success is considered as long as the next success hasn't arrived yet. It's a step-by-step process. Every milestone represents a success story. You always think that the next step is the most difficult one you've taken so far, but looking back, you realize that everything was relatively easy at the stage you are in now.* *Even if a startup venture doesn't yield the desired results, the skills acquired and the expanded network often lead to alternative opportunities. The journey itself, with its challenges and learning experiences, becomes a valuable reward for aspiring entrepreneurs.*

Emergent Competences

Table 11: Emergent Competences in the Greece Context

Competence	Importance	Quote
Coachability	Very important	*Be open to the suggestions of others. Having someone advise you is a blessing.* *There's no point in mentoring someone who doesn't want to listen.*
Resilience	Very important	*Difficulties are not to stop us but to move us forward.*

The insights gathered from the interviews with Greek entrepreneurs highlight two pivotal aspects of entrepreneurial competence: the significance of adaptability and networking, and the effective paths to acquiring these skills. Adaptability, underscored by resilience and innovative spirit, emerges as a critical competence. This is especially relevant in an economy marked by rapid changes and uncertainties, where entrepreneurs must pivot strategies, embrace new technologies, and continuously reinvent their business models to stay relevant. Networking, on the other hand, is not just about building contacts but about creating meaningful collaborations and accessing diverse perspectives and opportunities. It's a skill that transcends beyond mere social interactions, impacting market awareness and resource mobilization significantly.

Ireland

Competences in the EntreComp Framework

Table 12: Manifestation of EntreComp Competences in the Ireland Context

Competence	Importance	Quote
Spotting opportunities	Absolutely essential	*'You don't know if the product is going to succeed. You talk to people, you get feedback, you believe it will, and then you just have to jump. You have to try it. You have to get out there in the market in the real world. And that kind of tolerance of ambiguity can be difficult for scientists, for technical people, because they're taught in a different way. And then they keep postponing a decision, keep postponing a decision and then it's too late. I had my own businesses for 10 years. I raised venture capital myself and I remember one of my co-founders made a very good point; he came from a business family and it really stuck with me. He said: make a decision even if it's the wrong decision. No decision is the worst thing you can do or try to wait and get more data. It's very important that you just have to move, otherwise somebody else will eat you up for breakfast.'*
Creativity	Of lesser importance	*'I've seen founders succeed who haven't had any educational background in entrepreneurship but were willing to learn on the job. I think you have to have an open mindset: What I would see in founders is that they need to be coachable and they need to be willing to learn from their mistakes and take it on.'*
Vision	Of average importance	*'I think passion is a big thing for me. I mean I just really like to see the passion in the founder like in how well they know their space being a subject matter expert but also how passionate are they about the space and how passionate they are about being successful and passionate about that problem statement that they're trying to address. and is it just a nice to have problem statement they're addressing or is it a big painkiller.'*
Valuing ideas	Absolutely essential	*'I've seen so many people in startups waste so much money because they get their hands on money, and then they go, 'Oh, we can buy the market'. You know, we'll buy this and buy that, and sure, of course, it will work. No, no, no, no. You got to be really, really focused on trying to get the best value for money, right out of everything. You know, one of the best proponents of that lean model would be Ryanair, the Irish airline.'*
Ethical and sustainable thinking	Of average importance	*'I think it's very important for someone who's a leader that you listen more than you speak to the team, because some people may be deferential in a meeting, but they could have had the best idea that could change the game for your company.'*

Self-awareness and self-efficacy	Of average importance	'I don't have an issue with firing people within days; you know, I've actually fired people within hours. Because we don't have the money, and we don't have the time to devote ourselves to someone who's not there for the right reasons. That might sound tough. But I also picture myself saying that I am so invested in my business that if someone comes in and they aren't invested in the business, well, then they're wasting my time. And I actually don't have time; I have to be really cynical about time.'
Motivation and perseverance	Absolutely essential	'I don't believe in luck, per se, I think that you need to put yourself in the position for lucky things to happen to you. Never give up. So keep on trying. And I believe that that's where the lot actually comes from that again, you do need a bit of luck, right? But it's making your own luck is the most important thing. And you have the narrow probability by putting yourself out there as much as possible.'
Mobilising resources	Very important	'When you go and work for yourself, you're no longer powerful with your brand; they even don't answer the phone.'
Financial and economic literacy	Absolutely essential	'I'm a big believer that education has got to be twofold: It's got to be the theory of entrepreneurship, but it's obviously got to be applied as well. And I think if you can mix theory and application, this is what we build into all the training programs we do.'
Mobilising others	Absolutely essential	'When you go and work for yourself, you're no longer powerful with your brand; they even don't answer the phone.'
Taking the initiative	Of average importance	'I love what I do. I love building things. I like making things. I like seeing the fruits of what we have achieved, working on every continent across the globe.'
Planning and management	Very important	'Never fall in love with your product. Process scales. product doesn't'
Coping with uncertainty, ambiguity, and risk	Absolutely essential	'I don't have a safety net. And I don't have a wealthy background. Therefore, if I fail, I failed miserably, because, basically, the risk is huge. So for me, that was a huge driving force to succeed. And I would succeed; basically, if I had to work, you know, 15 hours a day, I would do it because there is no alternative in my case.'
Working with others	Absolutely essential	'There's a lot of people who have very powerful jobs and corporations who have an ego and think that they're really good at everything they do because they have all these different people doing it and all they have to do is click their fingers, and then all they have to do was talk about it. Those people I avoid when hiring, because those people aren't humble enough to work in a startup. They believe that they are fantastic. But when you actually take them out of that environment and put them with a laptop on a table, you know, a tiny office, and say you gotta make something work. They can't function. They can't do it. I've seen it before.'
Learning through experience	Absolutely essential	'There's a bit of a Kamikaze for anybody who wants to go out and start a business, especially someone who had a good job, and sometimes it's rough in terms of, you can't pay the bills; you're under pressure financially. And there's this drive to make it work.'

[OBJ]

Emergent Competences

Table 13: Emergent Competences in the Ireland Context

Competence	Importance	Quote
Resilience	Very important	'There is a long mile to go before having something that is solid and create employment, so that you indirectly give back to the public as you create new wealth and new employment.'
Coachability	Absolutely essential	'Looking back, I'm not sure I would go through all these steps. It requires a lot of energy which I don't have anymore. We never had the experience in terms of managing a business, so we had to learn every single detail, even in terms of legal, accounting and all these aspects of the entrepreneurship. But you never get bored, that's for sure. You have always something to learn and to do.'
Having diverse Interests	Very important	'What I learned, and this takes time, is that you have to know what the verticals are, you need to understand your market, and then focus on this market. Try to then shape your product even if it's generic but shape it so that it is easier to sell to this vertical. This was the learning curve that we had to undergo. And till you stabilise some business model that you now have.'
Technical skills / Domain-specific skills	Very important	'We had a search engine for the semantic web at that time and had been contacted by a potential buyer to replicate their in-house engine and so that's what kickstarted the creation of the start-up. So we got our first contract. Which helped move people out of the research team into the company and to work for our customer, which at that time gave us the energy and was giving us the ability to have a part time job so we were able to continue working in our postdoc positions and in parallel be able to invest into our own company.'
Capacity to continuously learn.	Very important	'We were considered as expert in this technology which was highly sought in an enterprise environment and this kind of consultancy brings a lot of money, that allows to pay the bill, allows to keep the team. We were also involved in research projects that allowed us to get some funding and allowed us to keep the company alive. This took 2-3 years and in the background the team was working on what is now called Siren that is our main product, namely a data investigation and exploration platform. […]So one can see that it was the third iteration that was successful. So it was a long road, not very quiet and calm, with sort of very big surprises along the way. It was very enriching but it was also tough. This is the reality of what it means to build a business.'
Open mindedness, the capacity to listen	Absolutely essential	'But it was, was in fact what we discovered afterwards is that our project was really niche. It was a good idea but it was very niche. Only a few companies really needed that, and it was very difficult to replicate at a large scale unless you have maybe more solid shoulders and proper sales.'

Confidence	Very important	*'I had an engineering background in France then I moved to research and that's why I moved to Ireland because in France it was very difficult to move from an engineering background to a research background. And when I was in the start-up, after university and after research there, you know, I think this engineering spirit keeps kicking and says 'OK, we invented that, but how can this be really useful, is this really going to have some impact on people's lives or is it just something you know nice only on paper?''*
Other soft skills	Absolutely essential	*'Ideally you have both: character and competence. Both are good. But you know, character, that's what it is important. Because you can put the bad apple and then this can have a detrimental effect on the whole team. There is a team dynamic which means that you can improve people's characters and you can also increase competence of individual members. Again, from within the team.'*
Wholistic perspective	Absolutely essential	*'There is a legend to see that start-ups usually recruit people who are young with no previous experience. You need to have a certain stability to bring some people with a lot of experience. And once you start to reach a certain size then it's certainly at this point the right time to bring some of these people to put a proper structure and process so that you can scale.'*
Getting access to scaleup funding	Absolutely essential	*'I think one of the reasons why people become entrepreneurs in Ireland is that you're not depending on the government, you're doing it yourself. I think in other countries where there's a very good social welfare system, it becomes harder, because you've got these fallbacks.'*
Focusing on social/societal impact	Absolutely essential	*'I think it's more about creating social and economic impact. For university it's not all about economic impact, social impact is very important. But economic impact leads to social impacts, it's about creating jobs in Ireland, high tech jobs for an innovation economy. Number of jobs is really the key, the key measure. It was researchers that were employed here that generated the intellectual property, that generated the market opportunity. We help them secure funding. They were employed while they work here. A lot of them are still here. First of all, you need a mix of a team. So you can't have all these kind of business people you need.'*
Efficiently acquiring entrepreneurial skills	Very important	*'Technical people, are different, you know these kind of spectrum of personality types, the different colours of personalities you need, deep technical people, you need leadership, but you also need people with empathy. People that have good feelings and relationships with people. You know you need that mix and key factors for success are coachability, knowing what you don't know. Investors call it coachability, willingness to take advice. You need to be willing to learn and to listen. That's really important.'*
Knowing the customers	Very important	*'There's a key one for academics: it is tolerance of ambiguity. So if you're a scientist, you know you're taught to research everything. If you're a researcher, you're taught not that it's all about facts, it's all about proving things. But in business, you don't have all the information. You have to tolerate the fact that you don't know everything.'*

Regarding the most important entrepreneurial competences in the Irish ecosystem and some key points on how to acquire them, we shall need to reflect on our understanding and findings for the Irish entrepreneurial landscape. What we found out there was that the entrepreneurial journey in Ireland begins with a distinct mindset, characterized by a drive to succeed and a deep passion for building and creating. This spirit can be found not only in highly specialised deep techs but also in very 'basic' or 'routine' business ventures. As acquired through the interviews, entrepreneurs themselves admit that their endeavour is constantly fueled by the desire to create something of their own, something on their own, despite the high risks involved or associated with.

All stories collected and curated reflect a common thread among Irish entrepreneurs: turning the fear of failure into a driving force for success. This made crystal clear by how the entrepreneurs embrace challenges, often working determinedly to see their vision come to fruition, driven by a passion that makes the hard work feel less like a job and more like a calling and mission.

Turkiye

Competences in the EntreComp Framework

Table 14: Manifestation of EntreComp Competences in the Turkiye Context

Competence	Importance	Quote
Spotting opportunities	Absolutely essential	*"Try to understand the problems in the industry, focus on problems that you can solve"* *"Start the right job (that solves an important problem), in the right place (in a growing market), at the right time (when underlying technology is mature enough), with the right people (who share your passion and possess necessary skills).* *"Check international agreements and upcoming regulations to find new market opportunities."* *"Detecting and understanding the problems from a right perspective, considering where the complaints of the users/customers agglomerate."* *"focusing on commercializable ideas, and those who have a current market."* *"We hold weekly team meetings on new trends and innovations."*
Creativity	Of average importance	*"We train interns to do research, we organise competitions within ourselves; we prepare a problem and hold competitions (small hackathons within the company)"* *"Be innovative to create difference. Blend engineering knowledge with other fields to create innovations."*

Vision	Of average importance	*"We believe that we are at the edge of a robotic revolution, and we are happy to be part of this transformation."* *"Visionary to see and act on the new trends in technology.* *"[we] focused on new product development to feed our vision of transforming the agriculture industry through applying new digital technologies."*
Valuing ideas	Of average importance	*"talented in understanding and assessing the opportunities of new technological developments and trends"* *"Start by doing comprehensive market research. If your volume is not sufficient, this will cause you to experience a loss of time as you may not be able to do commercially profitable business."*
Ethical and sustainable thinking	Of average importance	*"we tried to create an impact-focused business model… we realised that women cooperatives in the rural areas have difficulties to access market and make sales"* *"We want to enable sustainable and efficient farming by transforming the industry"* *"Produce solutions for the problems of the world, such as sustainability."*
Self-awareness and self-efficacy	Of average importance	*"Know your capabilities and competencies very well. Know what you can and cannot do"* *"Knowing the team's limitations is important."* *"Self confidence when talking to prospective customers"*
Motivation and perseverance	Absolutely essential	*"They should not give up; they should stand behind their ideas."* *"Don't be demoralised if a customer gets excited about your product at first and then doesn't buy for different reasons. Move forward simultaneously with different projects with different clients"* *"The most important thing is passion; you can learn others in some way. Continuous effort is required"* *"Persistence, not giving up and steadiness, putting the necessary effort, not letting ups and downs due to challenges in the process and keeping the motivation of starting a startup"*
Mobilising resources	Very important	*"They were able to make impressive presentations to top managers of large potential customers and were trusted, thanks to his background and contacts developed in his former jobs."* *"Keep an eye on the support mechanisms and benefit from them. Also, startup contests bring visibility."* *"Support will follow once you show your dedication."*
Financial and economic literacy	Of little importance	*[it is essential for entrepreneurs to have] knowledge on operations, market information, and finance apart from technical knowledge*
Mobilising others	Of average importance	*"We are keen on training young talented people"* *"Meet many new people, especially experienced managers, new ideas can emerge."*
Taking the initiative	Very important	*"It's not about the idea, it's about being able to do it"* *"If you believe you saw a big opportunity, do not let it stay as a dream, but start taking small actions with limited resources"* *"It is also about doing many things alone, not waiting for a push from mentors or incubation managers."*

Planning and management	Not important at all	
Coping with uncertainty, ambiguity, and risk	Absolutely essential	*"Coping with uncertainties, being mentally strong, and resilience."* *"Instead of falling in love with the idea and being a dreamer, be customer-oriented and solve a problem, then focus on the market and see if there are enough people who will pay for it."* *"But you should make tests in those markets as well, to assess the potential demand."* *"Build the MVP as quickly as possible, collect feedback from customers and validate the product-market fit."* *"We developed 20 different MVPs and prototypes until our customers were satisfied."*
Working with others	Absolutely essential	*"We help the [corporate] customers on how to produce with our product and market it. We also develop joint projects with companies."* *"It's important to be with people who can do it."* *"A supportive team: they should support each other on good and bad days."* *"When they faced a problem or in a crisis, they tried to find a way to overcome these challenges by themselves.* *"Building a team is critical, test your team before you face devastating problems and crises. "* *"Team members should openly express their opinion, and respect when there is a different decision."*
Learning through experience	Very important	*"Open to mentoring, learning from others, benefiting from others' experiences."* *"It was one of the mistakes that we made, not spending time talking with the members of the advisory."* *"Open to learning from others."* *"If you embrace the mentality of learning from mistakes, you don't get stressed."* *"Those who fail but try to understand why they fail learn better and faster."*

Emergent Competences

Table 15: Emergent Competences in the Turkiye Context

Competence	Importance	Quote
Coachability	Very important	*"taking advice and listening mentors are all necessary for entrepreneurs to be successful"* *"Open to criticism and being coachable. At early stages, entrepreneurs should disclose and discuss their idea with everyone who is capable of giving feedback. they must be open to all negative and positive feedback"* *"Open to feedback and self-development. Valuing mentors and investors' insights"*
Flexibility/open-mindedness	Very important	*"Being flexible and open-minded is critical"* *"The entrepreneur needs to be agile and open to development. Everything is developing and changing very fast. S/he must change his/her mind and work accordingly."*
Resilience	Very important	*"Take care of your mental and physical health. Exercise and practice breathing therapy. Reset your head in the meantime, do not skip vacation."* *"You should be prepared for rejection. You should purify work from your emotions and approach professionally"* *"I say either I succeeded, or I learned a lesson. I do not say I failed."*
Complementarity in teams	Very important	*"complementary skills and balance each other with their personality traits. Experience and knowledge in different managerial areas. Balanced attention to R&D and the market".* *"Knowing the team's limitations. Mapping and acquiring necessary skills for targeted technologies and products- hiring consultants. "* *"There are the commercial and technical aspects; if you're in the trade side, find a technical partner."* *"You need people with diverse thinking and expertise in the founding team"* *"[entrepreneurs] must form a good team and develop their competences to form a good team"* *"knowledge on operations, market information, and finance apart from technical knowledge is critical"* *"Having team members with varied and right skills is essential"*
Agility	Very important	*"An open eye on the industry and technical developments for constant innovation, agility".* *"Keep the team agile with flexible work arrangements even after you scale your business."* *"If the idea is bad, accept it, give it up at some point. Do something else"* *"Validate your initial idea. If needed, pivot. "*

Customer centricity	Absolutely essential	"Being proactive in customer relations and showing them their thoughts are valued." "Starting with good feedback about user experience, we had to change our app's design two times". "Tailoring products according to special customer needs and intense after sales support" "Pay utmost attention to users, customers, and collect feedback from them." "Building trust with customers by showing the impact your product created through metrics and always engaging in contact.". "We request monthly meetings even if there is no such demand from the customer. We get their ideas and tell them about developments whether we do it or not." "Collecting feedback from customers, being in the field and engaging in sales activities from the first day. We talked with the prospective customer even before we developed the product."
Valuing employees	Of average importance	"We tell new employees that we are not looking for operators; we do not want people who do what is assigned." "putting the employees' needs first and empowering them to reach their potential is our goal "Our team is more valuable to us than the customer. "Instead of leaving work at 6 o'clock, our team sits and chats and has fun; having built that environment is our greatest achievement." "Team members should have diverse thinking, they should openly express their opinion, and respect when there is a different decision"
Technical competence	Very important	"Lacking IT skills was the biggest challenge. There was no software developer in the team, nor technical mentors" "Our technological competences, being young, well-educated, knowledgeable and talented in technology development provide us with many advantages" "Finding the best technology infrastructure for your product increases product performance and reduce integration time" "Multidisciplinary perspective to understand the problems, applying various technical instruments to develop solutions are necessary for success." "Technical competences of the team and technology-based characteristics of the idea/product are the main criteria to assess the entrepreneurial teams"
Sales skills	Absolutely essential	"Add salespeople to your team if co founders are all from the technical side." "Tech startups start to think about sales after the product development is completed. They think that good products always are sold. But this is not true for most cases. Therefore, from the first day I had a sales-focus" "add sales and marketing people to the team if you lack those skills." "you need to plan how to sell your products " "being in the field and engage in sales activities from the first day creates difference"

Monitoring the sector	Very important	*" We closely monitor sectoral developments and competitors." "curiosity, innovativeness, analysing their competitors well and being knowledgeable about the local and global markets are critical for success. "Thanks to the technology we have developed, our cost is 50% less to the customers than global competitors.*

The data gathered through interviews with Turkish entrepreneurs, HEIs, incubators and policy makers indicate that some of the entrepreneurial competences are essential to discover and successfully pursue entrepreneurial opportunities. These competences are spotting opportunities, motivation and perseverance, coping with uncertainty, ambiguity and risk, and working with others. These competences are enlisted in Entrecomp. Having a customer-centric perspective and sales skills are the competences that are frequently mentioned by interviewees but not directly aligned with those in Entrecomp. Mobilizing resources, taking the initiative, learning through experience, coachability, flexibility, resilience are among the very important entrepreneurial competences.

Insights provided by Turkish entrepreneurship ecosystem actors align with the general understanding of entrepreneurship and the lean approach. Entrepreneurs need to spot entrepreneurial opportunities by testing and validating their ideas, to learn by experimenting, interact with customers from the first day, collect feedback and be flexible and openminded to pivot and be motivated, perseverant, resilient to overcome the disappointment of failures. This is also relevant in an economy marked by financial and economic uncertainties, vulnerability, instability, and resource scarcity where entrepreneurs must understand the market and customers, find a product-market fit, be flexible to continuously reinvent their business models, embrace new technologies to internationalize their operations and leverage resources.

Ukraine

Competences in the EntreComp Framework

Table 16: Manifestation of EntreComp Competences in the Ukraine Context

Competence	Importance	Quote
Spotting opportunities	Absolutely essential	*"We did a lot of work to be here at the moment and we also see a lot of possibilities in the future."* *"It [business] is a growing potential. This is the sky. This is a limit that doesn't exist. This is a possibility to create anything and be responsible for it. This is a possibility to be an innovator and show to everybody what is possible and not to expect from anyone that something is impossible. It is a possibility to change the world."*
Creativity	Of average importance	*"If you want to make something, you need to be a creative guy."*
Vision	Of average importance	*"You will create jobs, you will build, you will realise your dream, the dream of other people, because this will be the dream for the whole team and the mission for the whole team."*
Valuing ideas	Absolutely essential	*"Startup or the startup industry is a chance to scale your idea."* *"Mistakes, many mistakes, and many mistakes about the ideas."*
Ethical and sustainable thinking	Of average importance	
Self-awareness and self-efficacy	Of average importance	*"Each business is individual, just as each person is unique, so is each business. Listen to your client, watch how the technology market is developing, and try to be one step ahead."*
Motivation and perseverance	Absolutely essential	*"Business is not about some kind of romantic stuff. It's not inspiration and something. It's mostly about your discipline. It's mostly about your metrics. It's mostly about your exact goals which you want to achieve."* *"What motivates me is that, first, you see a goal in front of you. Secondly, it is the realisation that no one else will do it but you. No matter how difficult the situation is, you can afford to say for 10-15 minutes: damn, it's hard. But then you ask yourself: if I do nothing, will it get better or will it get worse."*
Mobilising resources	Of average importance	
Financial and economic literacy	Absolutely essential	*"Financial and economic literacy - proposal sharing, execution, accuracy with money. Take feedback from the customer, from the experts, from everyone." "Be very accurate and very responsible with money, whatever your market is."*
Mobilising others	Very important	*"I recommend speaking with people, speaking with more and more leaders, becoming a part of the community, and trying to use your network."*

Taking the initiative	Of average importance	”Entrepreneurs blur the line between work and personal life. These are people who live their work, their business, their product. They believe in it 1000%.”
Planning and management	Absolutely essential	”When you want to create a great startup, you should be dedicated to the business, to the work. At least 85 percent, 90%.”
Coping with uncertainty, ambiguity, and risk	Absolutely essential	”Never stop trying. Don't believe in failures. And don't be afraid to make failures and just move forward. Because the business is not about success stories, the business is about finding the proper way.” ”Don't give up as there will be enormous amount of challenges.” ”You have to work. Every day, you are facing difficulties. You have to work on them, and problem-solving is a permanent process in the life of any active entrepreneur.”
Working with others	Absolutely essential	”Give people room to do their stuff, the experiment and basically empower them in this way.” ”Love the people you work with - make them successful, give them meaningful work, actually make their life better through work.” ”Our idea is to help create workplaces, to help create new companies, and about the possibility of creating something new and organizing it in the ecosystem.”
Learning through experience	Absolutely essential	”Always listen to your customers and obtain a deep understanding of their problems. Try to understand the market and create the project for it.”

Emergent Competences

Table 17: Emergent Competences in the Ukraine Context

Competence	Importance	Quote
Stress resistance	Very important	
Sales	Absolutely essential	
Competitors analysis	Very important	”You have to wake up thinking about what your competitors are doing daily, like checking out what is happening, and not just your direct competitors, but generally in the industry, you need to see trends.”
Communication with team	Very important	”We have set up every day for brainstorming. It's like a mix of an operational meeting, like a stand-up daily call with brainstorming. It's just that way, we keep the whole team engaged in thinking about product development.”
Partnership	Very important	”Only a technical founder will be unable to do stuff; only a business founder will be unable to do things. The best case is that there are two founders. At least you probably know two because it's much easier to agree between 2 and 3. So the ideal case is that one person is a business founder, one person is a technical founder, and then you need to agree. You will always be frank with each other.”
Discipline	Absolutely essential	”You have to focus at least 90% of your time. You have to focus on a startup.” ”When you are an entrepreneur, your life belongs to your business, and you don't have any more time at home or some weekdays off, etc. You are constantly working on a 24/7 basis.”
Positive Attitude	Absolutely essential	”Positive way of thinking and understanding of using modern instruments in the contemporary world makes it possible to be open to all kinds of communications and partnerships.” “Every time we create something new charges us to do something more and something new again. So we just need to move forward.”
Hardworking	Absolutely essential	”We must work harder and believe and be successful due to hard work and teamwork.”
Strong Execution	Very important	

“We must work harder” — the main entrepreneurial credo. The study of Ukrainian entrepreneurship revealed dozens of insights and patterns. “Ukrainians have this very specific attitude and vibe for entrepreneurship and SME's,” — Valeria Ionan, the Deputy Minister of the Ministry of Digital Transformation of Ukraine said. That's true. Even nowadays, in the midst of a full-scale war, the number

of small and medium-sized enterprises in Ukraine is growing and breaks pre-war records, according to OpenDataBot - a service for monitoring registration data of Ukrainian companies.

Since the beginning of the war, many Ukrainian tech businesses have expanded into foreign markets, including Central and Eastern Europe, Western Europe, America, and Africa. Among the respondents, we interviewed those who have opened subsidiaries or new offices abroad and continue their business despite everything. The main competencies of Ukrainian businessmen are discipline, hard work, and positive thinking.

Conclusion to the analysis of Competences

EntreComp Competences across Contexts

In accordance with the objectives of ExcellEnt, we have analyzed the interviews with the stakeholders across the four key target groups to reveal the most important entrepreneurial competencies resulting from the opinions or recurring patterns expressed by the interviewees. The following sections explain the manifestation of entrepreneurial competences in the EntreComp Framework as well as other emergent competences in each context. The competences are presented with an importance level rating denoted by the researchers in each context considering both the frequency of the related quotes in the interviews, as well as how strongly the interviewees emphasized them in their statements. A 5-point likert scale was used for rating the importance levels (5-absolutely essential, 4-Very important, 3- Of average importance, 2-Of little importance, 1-Not important at all). Next to the importance levels, we present quotes associated with each competence from the interviews with the entrepreneurs, HEIs, incubators, and policy makers in each context.

Table 18: List of Importance for EntreComp Competences across targeted ecosystems

Competence	TR	GR	UA	BG	FR	IE	Average
Motivation and perseverance	5	5	5	5	5	5	**5,0**
Coping with uncertainty, ambiguity, and risk	5	5	5	5	5	5	**5,0**
Working with others	5	5	5	4	5	5	**4,8**
Learning through experience	4	5	5	5	4	5	**4,7**
Spotting opportunities	5	3	5	5	3	5	**4,3**
Valuing ideas	3	5	5	4	4	5	**4,3**
Planning and management	1	5	5	4	4	4	**3,8**
Vision	3	5	3	4	4	3	**3,7**
Mobilising resources	4	4	3	4	3	4	**3,7**
Financial and economic literacy	2	2	5	3	4	5	**3,5**
Mobilising others	3	2	4	5	1	5	**3,3**
Ethical and sustainable thinking	3	4	3	2	4	3	**3,2**
Self-awareness and self-efficacy	3	2	3	4	4	3	**3,2**
Taking the initiative	4	3	3	3	1	3	**2,8**
Creativity	3	3	3	2	3	2	**2,7**

Our analysis reveals that, among the competences in the EntreComp Framework, "motivation and perseverance", "coping with uncertainty, ambiguity and risk", "working with others" and "learning through experience" are the most important common competences across six ecosystems are. Figure 13 exhibits the importance of all EntreComp competences in each participant country in a radar chart.
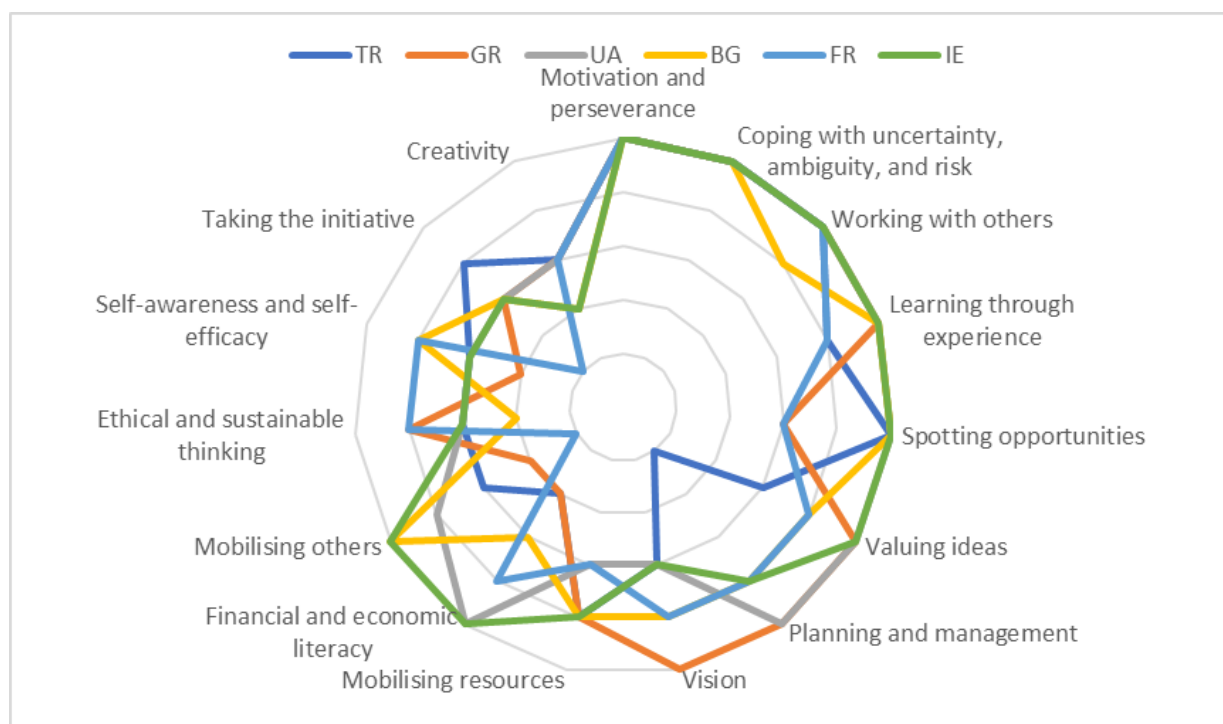
Figure 14: Exhibition of the Importance of EntreComp Competences across targeted ecosystems

Emergent Competences across Contexts

The analysis of entrepreneurship competences across the 6 contexts revealed some emergent important entrepreneurship competences in addition to the ones covered in the EntreComp Framework. These are resilience, coachability, flexibility and agility, customer centricity, technical or domain specific skills, openness to experience, continuous learning, sales skills, strategic orientation, complementarity in teams, and valuing employees.

The emergent competences come from different levels of analysis including the individual, team, and organizational levels. The individual level competences include both personality traits and knowledge, skills, and attitutes. The team competences are not only an aggregation of individual level competences of the founder team. They also manifest through the synergies created in the team thorugh the complementarity of skills and attitutes, as well as motivational effects those also yield to innovative outcomes and effective functionin We provide example quotes from the interviews for each emergent competence in Table 19.

Table 19: Final Emergent Competences across the Studied Contexts

Emergent Competences	Example Quotes for Emergent Comptences
Resilience	*"You should be prepared for rejection. You should purify work from your emotions and approach professionally"* "I say either I succeeded, or I learned a lesson. I do not say I failed." "Difficulties are not to stop us but to move us forward."
Coachability	"Open to criticism and being coachable. At early stages, entrepreneurs should disclose and discuss their idea with everyone who is capable of giving feedback. they must be open to all negative and positive feedback" "... coachability, knowing what you don't know. Investors call it coachability, willingness to take advice. You need to be willing to learn and to listen" "Open to feedback and self-development. Valuing mentors and investors' insights" "Be open to the suggestions of others. Having someone advise you is a blessing." "There's no point in mentoring someone who doesn't want to listen."
Flexibility & agility	*"The entrepreneur needs to be agile and open to development. Everything is developing and changing very fast. S/he must change his/her mind and work accordingly."* *"Keep the team agile with flexible work arrangements even after you scale your business."* *"Validate your initial idea. If needed, pivot. "*
Customer centricity	"The common mistake is to try and have something perfect before trying to sell it." "Product validation and its deployment to the market are tricky, and if not done correctly could seriously hinder the process of scaling-up." "Collecting feedback from customers, being in the field and engaging in sales activities from the first day. We talked with the prospective customer even before we developed the product." "Being proactive in customer relations and showing them their thoughts are valued."
Technical / Domain-specific skills	"Understanding of one's domain is really important." "Lacking IT skills was the biggest challenge. There was no software developer in the team, nor technical mentors" "Our technological competences, being young, well-educated, knowledgeable and talented in technology development provide us with many advantages" "Finding the best technology infrastructure for your product increases product performance and reduce integration time" "Technical competences of the team and technology-based characteristics of the idea/product are the main criteria to assess the entrepreneurial teams"
Openness to experience	"The ability to listen intelligently and selectively, to be proactive in decision-making, and to effectively lead and bring others along on the entrepreneurial journey is pivotal." "Engaging in extracurricular activities at school and university helped me push beyond conventional boundaries."

Continuous learning	*"Entrepreneurs always need special knowledge and competences, hence the importance of studying."* *"You have to train yourself all the way along."* *"Continual learning and adaptability remain central to an entrepreneur's success, enabling them to face challenges and navigate the dynamic business landscape effectively."*
Sales skills	*"... Therefore, from the first day I had a sales-focus"* *"add sales and marketing people to the team if you lack those skills."* *"you need to plan how to sell your products "* *"being in the field and engage in sales activities from the first day creates difference"* *"Add salespeople to your team if co founders are all from the technical side."*
Strategic orientation	*"You have to wake up thinking about what your competitors are doing daily, like checking out what is happening, and not just your direct competitors, but generally in the industry, you need to see trends."* *" We closely monitor sectoral developments and competitors."* *"curiosity, innovativeness, analysing their competitors well and being knowledgeable about the local and global markets are critical for success.* *"Thanks to the technology we have developed, our cost is 50% less to the customers than global competitors.*
Complementarity in teams	*"There is a team dynamic which means that you can improve people's characters and you can also increase competence of individual members. Again, from within the team.'* *"There are the commercial and technical aspects; if you're in the trade side, find a technical partner."* *"You need people with diverse thinking and expertise in the founding team"* *"[entrepreneurs] must form a good team and develop their competences to form a good team"* *"Having team members with varied and right skills is essential"*
Valuing employees	*"putting the employees' needs first and empowering them to reach their potential is our goal"* *"Our team is more valuable to us than the customer."* *"We tell new employees that we are not looking for operators; we do not want people who do what is assigned."* *"Instead of leaving work at 6 o'clock, our team sits and chats and has fun; having built that environment is our greatest achievement."*

Descriptors for Emergent Competences across Contexts

In Table 20 below, we provide the descriptions for the emergent competences based on the analysis of the interview results and insights across the six entrepreneurship ecosystems.

Table 20: Descriptors for the Final Emergent Competences

Emergent Competences- Listed by importance	Descriptors of Emergent Competences
Resilience	*Be resistant to stress *Be prepared for rejection by the customers and investors *See failuires as a lesson, move forward with what you have learnt
Coachability	*Be open to critism and negative feedback, accept that some of your ideas may be bad *Listen to suggestions and advise from others carefully *Value the feedback from mentors and investors, be willing to learn from them
Flexibility & agility	*Be agile in your operations, keep the work arrangements flexible *Be ready to change in the fast changing environment *Quickly test your assumptions, pivot when they don't work
Customer centricity	*Collect feedback from prospective customers from the first day *Do not fall in love with your idea, validate your product in the market *Be proactive in customer relations and show them their thoughts are valued
Technical / Domain-specific skills	*Carefully access the key technical skills you need and adapt them early in the way *Understand the domain-spesific skills to operate in targeted markets *Find the most suitable technology infrastructure for your products and services
Openness to experience	*Engage in different activities and networks in your social sphere *Explore and try new opportunities in different domains *Be bold to face new challenges to push your boundaries
Continuous learning	*Embrace the importance of continuous learning *Train yourself and the team all the way along *Navigate the dynamic business landscape effectively
Sales skills	*Having a great product does not bring success, plan how you will sell it *Have a sales focus from the first-day, closely engage with the field to embrace a sales-focused approach *Make sure you have people with sales skills in your core team

Strategic orientation	*Continuously analyze existing and potential competitors' products, services, and actions *Question your competitive advantage. Focus on offering higher value to customers than that of your competitors *Embrace short and long-term strategies, but be ready to make shifts considering sectoral developments
Complementarity in teams	*Bring people with different skills to the team to fill the skills gaps *Form a team people with different perspectives and diverse thinking frameworks, so that you can balance each other in decision-making *Exploit the diversity of the team as a resource for feeding each member with new skills and perspectives
Valuing employees	*Create a climate that makes the employees happy and productive *Recognize the importance of your human resources as a critical asset, make the employees feel that they are valued *Empower the employees by assigning big responsibilities, facilitate an environment to encourages them to bring in new ideas

A Process Framework of Important Competences

In this section, we bring together all the entrepreneurial competences covered in this study, both the ones in EntreComp and the emergent competences. Using the insights from the outputs of interviews with different ecosystem actors in six contexts, we exhibit their differering importance level in the three main phases of entrepreneurship, namely oppotunity identification, putting into action, and scale-up phases. The competences are listed according to their aggregate importance level marked in all six contexts. X mark indicates very important, small x indicates average importance, and blank cells mean not important at all. Table 21 shows the relavance of each competence across phases, sorted by their importance.

Table 21: Importance of Competences in Different Phases

Competences in Entrecomp- Listed by importance	Opportunity identification	Putting into action	Scale-up
Motivation and perseverance		X	X
Coping with uncertainty, ambiguity, and risk		X	X
Working with others		X	X
Learning through experience		X	x
Spotting opportunities	X	x	x
Valuing ideas	X	x	x
Planning and management		x	x
Vision	X		x
Mobilising resources		x	x
Financial and economic literacy		x	x
Mobilising others	x	X	
Ethical and sustainable thinking	x		
Self-awareness and self-efficacy		x	x
Taking the initiative		X	
Creativity	x		
Emergent Competences- Listed by importance	**Opportunity identification**	**Putting into action**	**Scale-up**
Resilience		X	x
Coachability	x	X	x
Flexibility & agility		x	X
Customer centricity	X	x	x
Technical / Domain-specific skills		X	x
Openness to experience		x	x
Continuous learning		x	x
Sales skills		x	x
Strategic orientation		x	X
Complementarity in teams	x	x	
Valuing employees		x	x

Figure 14 exhibits all entrepreneurial competences relevant in each phase sorted with their importance levels- the most important competences are also marked bold. While some competences surface at multiple phases, their importance levels tend to vary. In addition, the important items among the main descriptors of the competences. For example, while mobilising resources may mostly include angel investment at the financial resources side in the putting into action phase, the kind of financial resources more relevant at the scale-up phase would be venture capital investments in line with the needs and plans of the venture at that phase.

Opportunity identification

- •Spotting opportunities
- •Valuing ideas
- •Vision
- •Coachability
- •Customer centricity
- •Mobilising others
- •Ethical and sustainable thinking
- •Creativity
- •Complementarity in teams

Putting into action

- •Motivation and perseverance
- •Coping with uncertainty, ambiguity, and risk
- •Working with others
- •Learning through experience
- •Mobilising others
- •Taking the initiative
- •Resilience
- •Technical / Domain-specific skills
- •Spotting opportunities
- •Valuing ideas
- •Planning and management
- •Mobilising resources
- •Financial and economic literacy
- •Self-awareness and self-efficacy
- •Coachability
- •Flexibility & agility
- •Customer centricity
- •Openness to experience
- •Continuous learning
- •Sales skills
- •Strategic orientation
- •Complementarity in teams
- •Valuing employees

Scale-up

- •Motivation and perseverance
- •Coping with uncertainty, ambiguity, and risk
- •Working with others
- •Flexibility & agility
- •Strategic orientation
- •Resilience
- •Coachability
- •Customer centricity
- •Technical / Domain-specific skills
- •Openness to experience
- •Continuous learning
- •Sales skills
- •Valuing employees
- •Learning through experience
- •Spotting opportunities
- •Valuing ideas
- •Planning and management
- •Vision
- •Mobilising resources
- •Financial and economic literacy
- •Self-awareness and self-efficacy

Figure 15: Exhibition of the Important Entrepreneurial Competences in Different Phases

Analysis of paths to acquire entrepreneurial competences and attitudes

Bulgaria

In Bulgaria entrepreneurship ecosystem, each path followed by entrepreneurs to acquire competences and attitudes — Formal Education and Training, Practical Experience, Networking and Community Engagement, and Personal and Professional Development — play a unique role in competency development. Formal education provides structured learning and theoretical knowledge, while practical experience offers hands-on learning and real-world application. Networking and community engagement open opportunities for collaboration and learning from peers, and personal and professional development focuses on self-guided growth and introspection. Detailed descriptions of these paths are discussed below.

Practical experience:

- Starting a venture
- Internships and apprenticeships
- Participation in business competitions

Formal education and training:

- Universities and other HEIs
- Specialized training programs
- Online courses and certifications

Facilitator: Cross disciplinary exposure

ENTREPRENEURIAL COMPETENCES AND ATTITUDES

Networking and community engagement:

Joining entrepreneurial networks

4. Attending industry conferences and events

5. Participation in mentorship programs

Other paths:

- Self-directed learning
- Experiential learning and reflection

Figure 16: Main paths to acquire entrepreneurial competences and attitudes in Bulgaria

Formal Education and Training:

- Universities and Colleges: Courses in business management, entrepreneurship, innovation, and leadership can provide foundational knowledge and skills.

- Specialized Training Programs: Entrepreneurship bootcamps, workshops, and seminars often focus on specific skills like vision development, resilience, and adaptability.

- Online Courses and Certifications: Platforms like Coursera, Udemy, or LinkedIn Learning offer courses on strategic planning, risk management, and motivational techniques.

Practical Experience:

- Starting a Venture: The act of creating and running a startup is a hands-on way to develop skills like vision, motivation, perseverance, and coping with uncertainty.

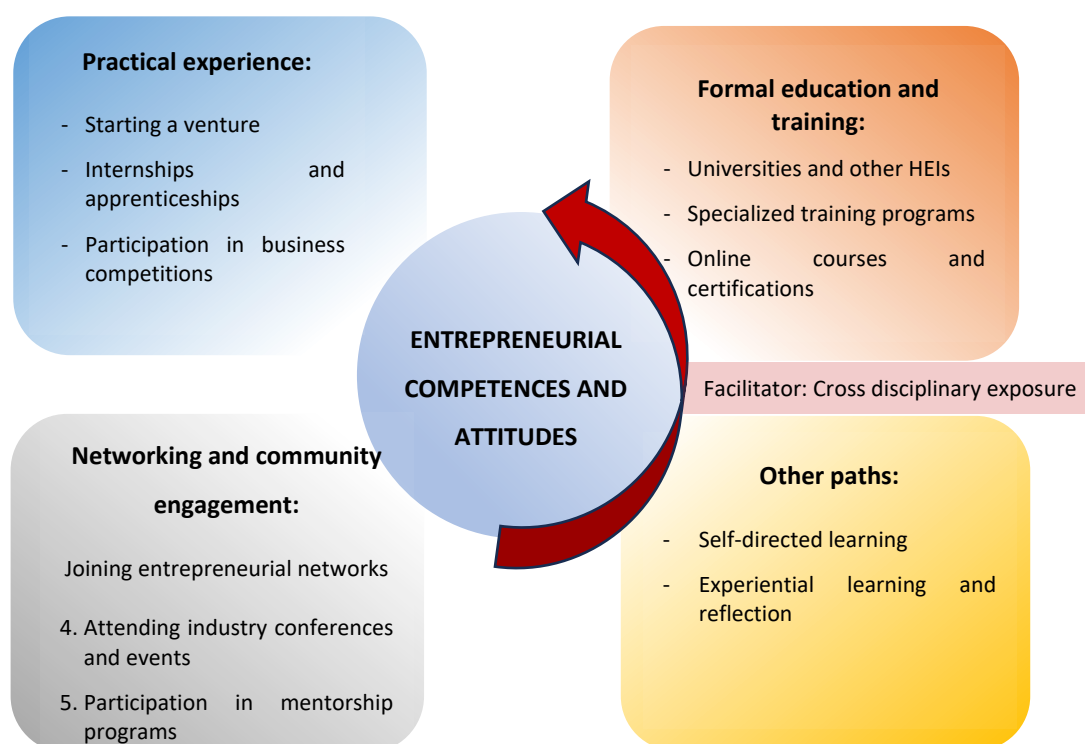- Internships and Apprenticeships: Working in a startup or innovative company can provide real-world experience in mobilizing resources and dealing with ambiguity.

- Participation in Business Competitions: Engaging in competitions can enhance skills like mobilizing others, resilience, and continuous learning.

Networking and Community Engagement:

- Joining Entrepreneurial Networks: Platforms like startup incubators, accelerators, and co-working spaces offer opportunities to network and learn from peers and mentors.

- Attending Industry Conferences and Events: These events are opportunities to learn from successful entrepreneurs and experts in the field.

- Participation in Mentorship Programs: Experienced mentors can provide guidance, feedback, and support in developing key competences.

Other paths:

- Self-Directed Learning

    o Reading and Research: Books, articles, and case studies on successful entrepreneurs and innovation strategies can be insightful.

    o Podcasts and Webinars: Many industry leaders share their experiences and advice through these mediums.

- Experiential Learning and Reflection

o Learning from Failures and Setbacks: Reflecting on personal experiences of failure can be a powerful way to build resilience and adaptability.

o Mindfulness and Self-awareness Practices: Techniques like meditation can help in developing self-efficacy and a clear vision.

Facilitator:

Cross-disciplinary exposure facilitates the acquisition of entrepreneurial competences and attitudes by

o Exploring Different Fields: Engaging with diverse disciplines can enhance innovative thinking and adaptability.

o Collaborative Projects: Working on cross-functional teams can strengthen skills in mobilizing others and working collaboratively.

Cross-disciplinary exposure while following the path of formal education and training, as well as that of personal and professional development facilitates the achievement of entrepreneurs to obtain necessary competences for success.

In summary, the development of these competences involves a multifaceted approach, incorporating a mixture of educational, experiential, and personal growth strategies. It is important to note that these paths are not mutually exclusive and often the most effective development strategy involves a combination of these approaches.

France

From the interviews with the successful French entrepreneurs, the typical path to acquire entrepreneurial competences relies first on the professional experience. that allows to understand the sector/market and identify unanswered customer needs. This obviously relies on an initial education curriculum, materialized very often through higher education degrees (master level), in a scientific/technical or commercial/marketing area. Based on the professional experience they acquire before becoming entrepreneurs, often in more than one company, the entrepreneurial idea germinates and the startups are created when the entrepreneurs feel an adequate degree of preparedness and confidence. This mix of initial education and professional experience allows to achieve the proper maturity level leading to the creation of their venture. As entrepreneurship requires numerous additional competences, some of the entrepreneurs also engage in continuous learning programs on

specific topics to acquire new skills. In parallel, the entrepreneurial experience is also perceived as a learning experience as they are faced with concrete problems and need to "learn by doing", by solving these problems. In this journey, they often receive support from specialized organizations, including in part learning/training components. These programs often have a dual component, with dedicated coaches covering fundamental entrepreneurial competences and also a pragmatic, hands-on approach consisting in learning from peers (including alumni of such programs) and/or from mentors. More generally, the interactions with the innovation ecosystem stakeholders made possible by the support organizations through networking activities, and notably potential business partners and investors, also represent a tremendous opportunity to strengthen the entrepreneurial competences.
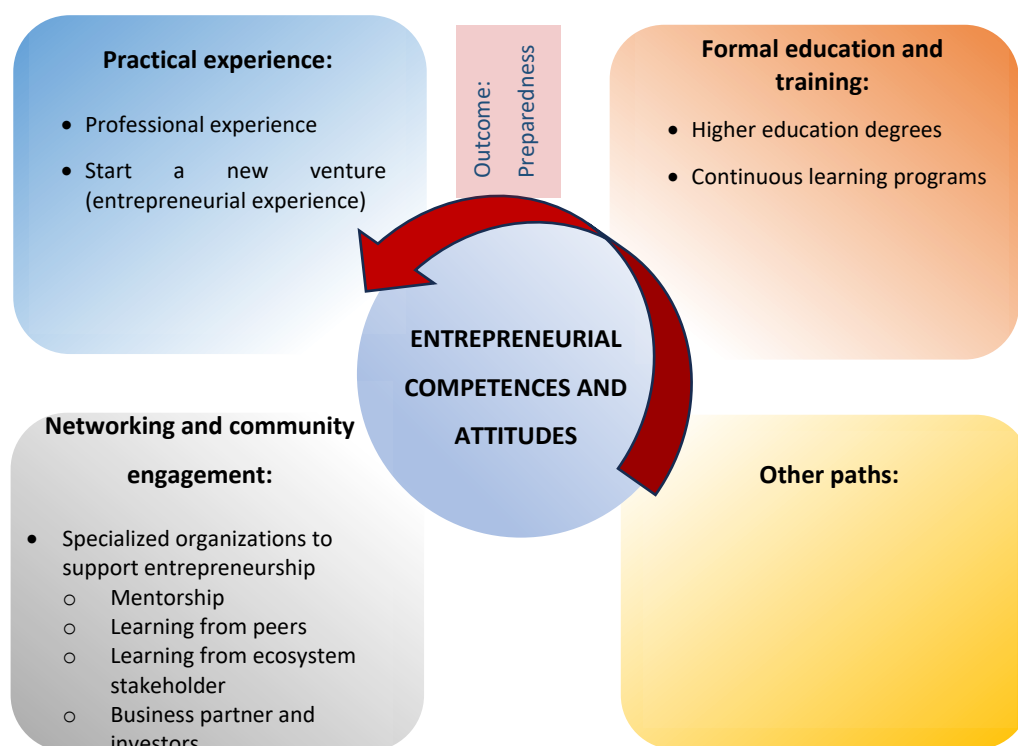
Figure 17: Main paths to acquire entrepreneurial competences and attitudes in France

Formal Education and Training:

- Higher education degrees: (especially master level) in a scientific/technical or commercial/marketing area.

- Continuous learning programs: Entrepreneurs also engage in continuous learning programs on specific topics to acquire new skills Industry-Specific Knowledge: For sectors like health tech or biopharma, domain-specific education (like medicine, biotechnology, etc.) is crucial.

Practical Experience:

- Professional experience: With professional experience, often in more than one company, the entrepreneurial idea germinates and the startups are created when the entrepreneurs feel an adequate degree of preparedness and confidence.

- Starting a new venture: Entrepreneurial experience is perceived as a learning experience as entrepreneurs are faced with concrete problems and need to "learn by doing", by solving these problems.

Networking and Community Engagement:

- Specialized organizations: With learning and training components.

- These organizations with dedicated coaches cover fundamental entrepreneurial competences and also a pragmatic, hands-on approach consisting in learning from peers (including alumni of such programs) and/or from mentors.

- They made the interactions with the innovation ecosystem stakeholders possible through networking activities, and notably potential business partners and investors

Outcome:

Preparedness and confidence emerge as outcome or professional experience and formal education and training, hence facilitates the ideation process as well as the success of the startup.

- o Preparedness: Professional experience and higher education degrees enhance the preparedness of entrepreneurs to start a new venture

- o Confidence: professional experience and higher education degrees increase the confidence of the entrepreneur to start a new venture.

Greece

In the Greek entrepreneurship ecosystem, entrepreneurs acquire necessary competences and attitudes for success by following four paths. These paths are Formal Education and Training, Practical Experience, Networking and Community Engagement, and Personal and Professional Development. Each path plays a critical role in the acquisition of competences and attitudes. Formal education and training support entrepreneurs to get theoretical and practical knowledge in fields such as business, engineering, computer science, or specific industry-related studies. Such an academic learning structure helps entrepreneurs to spot entrepreneurial opportunities and value them. Practical experience, on the other hand, supports the learning-by-doing process. Networking and community engagement open opportunities for collaboration and learning from peers, experienced entrepreneurs, and mentors. Personal and professional development includes investing in self-development in such as communication, leadership, financial literacy.

Practical experience:

- Starting a venture
- Internships and apprenticeships
- Participation in entrepreneurial projects

Formal education and training:

- Universities and other HEIs
- Specialized training programs
- Industry specific education and training

ENTREPRENEURIAL COMPETENCES AND ATTITUDES

Networking and community engagement:

- Attending industry conferences and events
- Participation in mentorship programs
- Receiving guidance from experienced entrepreneurs
- Incubators and accelerators

Other paths:

- Investing in improving soft-skills
- Gaining technological proficiency
- Investing in gaining financial literacy
- Investing in gaining legal and regulatory knowledge

Figure 18: Main paths to acquire entrepreneurial competences and attitudes in Greece

Formal Education and Training:

- Academic Programs: Entrepreneurs often start with formal education in relevant fields. This includes degrees in business, engineering, computer science, or specific industry-related studies.

- Specialized Training: Post-graduate courses or specialized training programs focusing on entrepreneurship, management, finance, and technology provide foundational knowledge.

- Industry-Specific Knowledge: For sectors like health tech or biopharma, domain-specific education (like medicine, biotechnology, etc.) is crucial.

Practical Experience:

- Starting Small Ventures: Many entrepreneurs begin with small projects or startups, learning through trial and error.

- Internships and Job Roles: Working in relevant industries or internships provides practical insights and understanding of market dynamics.

- Entrepreneurial Projects: Engaging in entrepreneurial projects during or after academic studies, often with a focus on problem-solving and innovation.

Networking and Community Engagement:

- Industry Events and Conferences: Attending these events helps in building networks and staying updated with industry trends.

- Mentorship Programs: Engaging with mentors who have experience in entrepreneurship provides guidance and practical advice.

- Guidance from Experienced Entrepreneurs: Seeking mentors who have been successful in similar fields can provide invaluable insights and guidance.

- Incubators and Accelerators: These platforms offer a combination of mentorship, networking, and sometimes funding, crucial for early-stage startups.

Other paths:

- Soft Skills Development: Enhancing communication, leadership, and emotional intelligence.

- Financial Literacy: Understanding financial management, budgeting, and planning.

- Technological Proficiency: Staying adept with relevant tools and technologies.

- Legal and Regulatory Knowledge: Understanding and complying with relevant laws and regulations.

The research on the Greek entrepreneurship ecosystem highlights two pivotal aspects of entrepreneurial competence: the significance of adaptability and networking. The most important path to acquiring these competences effectively combines formal education with practical experience, networking, and continuous personal and professional development. Formal education lays the foundational knowledge, while practical experience in real-world settings sharpens problem-solving and decision-making skills. Networking, facilitated through industry events and mentorship programs, opens doors to new opportunities and insights. Lastly, continuously investing in personal and professional development in areas like soft skills, financial literacy, and technological proficiency ensures that entrepreneurs remain agile and capable of navigating the dynamic landscape of business. This blend of education, experience, and personal growth forms the bedrock of successful entrepreneurship, as evidenced in the diverse experiences of Greek entrepreneurs.

Ireland

From the interviews with the successful Irish entrepreneurs but also from the interviews with incubators, accelerators, and other start-up organisations, as well as university and higher education modalities, the typical path to acquire entrepreneurial competences relies on teamwork and the thick-skinned entrepreneurs. The belief that "the team is one of the most important things" as well as resilience resonate deeply within the Irish startup ecosystem. This emphasis on collaborative efforts is not just about sharing the workload but rather about fostering a space where ideas can merge, and innovation can thrive. This is also significant when the unwanted outcomes come along the way, the team could stay resilient and pivot. Such collaborative environments help mitigate the isolation and loneliness often experienced by entrepreneurs, creating a community of like-minded individuals who can support and learn from each other.
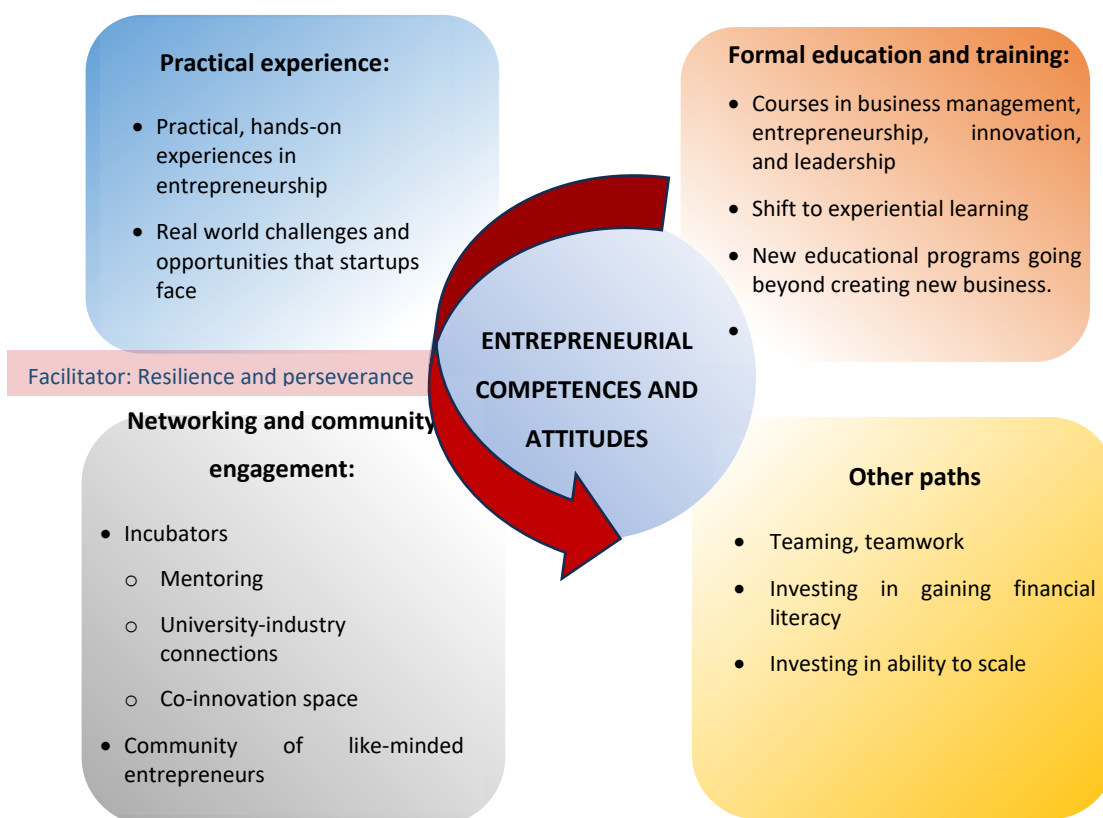
Figure 18: Main paths to acquire entrepreneurial competences and attitudes in Ireland

Formal education and training:

- Formal education in terms of courses in business management, entrepreneurship, innovation, and leadership provides foundational knowledge and skills

- A shift in entrepreneurial education from traditional content delivery to more experiential learning is clearly visible within the ecosystem.

- This approach broadens the scope of entrepreneurship beyond just business creation, emphasizing its applicability in various life contexts. Such educational programs are increasingly focusing on inclusivity, targeting minority and disadvantaged communities, consequently enriching the entrepreneurial ecosystem with diverse perspectives and experiences.

Practical experience:

- The Irish approach illustrates the importance of practical, hands-on experiences in entrepreneurship

- This approach align closely with the real-world challenges and opportunities that startups face.

Networking and community engagement:

- Support organizations and incubation programs play a pivotal role in nurturing Irish entrepreneurship.

- They offer multifaceted approach that includes training programs, mentorship, and industry-academia connections, materialized in programs tailored to the needs of the startups, focusing on creating new products and services

- They also foster co-innovation space.

- Collaborative environments create a community of like-minded individuals who can support and learn from each other.

Other paths:

- Teaming, teamwork: The typical path to acquire entrepreneurial competences relies on teamwork. The belief that "the team is one of the most important things" as well as resilience resonate deeply within the Irish startup ecosystem.

- Investing in financial literacy and ability to scale: Challenges such as financial literacy and the ability to scale effectively remain a daily reality. The need for better financial management skills and a deeper understanding of business dynamics is crucial for sustained growth.

Facilitator and outcome:

Resilience and perseverance is both a facilitator for learning from practical experience and also an outcome of networks and community engagement.

- o In order to learn from practical experience and challenges faced in the real world, entrepreneurs need to be resilient and perseverant.

o On the other hand, collaborative environments help mitigate the isolation and loneliness often experienced by entrepreneurs, create a community of like-minded individuals who can support and learn from each other.

The entrepreneurial journey in Ireland begins with a distinct mindset, characterized by a drive to succeed and a deep passion for building and creating. This spirit can be found not only in highly specialised deep techs but also in very 'basic' or 'routine' business ventures. As acquired through the interviews, entrepreneurs themselves admit that their endeavour is constantly fuelled by the desire to create something of their own, despite the high risks involved or associated with.

In comparison to the other EU countries participating in the project, Ireland may meet the criteria for what one expects or thinks about the 'American dream'. All stories collected and curated reflect a common thread among Irish entrepreneurs: turning the fear of failure into a driving force for success.

This makes crystal clear by how the entrepreneurs embrace challenges, often working determinedly to see their vision come to fruition, driven by a passion that makes the hard work feel less like a job and more like a calling and mission.

Turkiye

In the Turkish entrepreneurship ecosystem, learning by doing, in other words, hands-on experience and engaging in entrepreneurial activities is the most common and most efficient way of acquiring competences and attitudes. Learning by Formal Education and Training is another most common and efficient path to acquire entrepreneurial competences. This path is as important as the first one, practical experience, since almost all entrepreneurs that were interviewed are technology entrepreneurs, and these technical skills are mostly acquired through formal education. Domain knowledge in specialized technology fields or professional experience in specific industries and markets make entrepreneurs more alert to the emerging opportunities. Entrepreneurship courses / certification programs and special training programs in management are another path for entrepreneurs to acquire competences to start and successfully run their venture. Mentorship, joining incubation and acceleration programs, interactions with peers and experienced entrepreneurs play critical role in acquiring competences and attitude and make entrepreneurs more resilient. Although paths that entrepreneurs follow to acquire entrepreneurial competences and attitudes vary, some patterns are recognizable.

Practical experience:

- Work experience and internships
- Starting small ventures
- Engaging in active search

Formal education and training:

- Academic programs at universities and other HEIs
- Specialized diploma programs
- Specialized entrepreneurship training

Facilitator: Open mindedness, coachability, resilience

ENTREPRENEURIAL COMPETENCES AND ATTITUDES

Networking and community engagement:

- Mentorship
- Guidance from experienced entrepreneurs
- Incubators and accelerators

Other paths:

- Teaming
- Working with consultants / consultancy firms
- Partnerships and certifications
- Intrapreneurial activities

Figure 19: Main paths to acquire entrepreneurial competences and attitudes in Turkiye

Formal Education and Training:

- Academic Programs: Entrepreneurs mostly acquire technical competences and knowledge through formal university education in relevant fields such as engineering, natural sciences, or business. Formal academic education helps entrepreneurs to acquire competences such as spotting opportunities, taking initiative and self-awareness and self-efficacy besides technical skills.

- Specialized diploma programs: Post-graduate programs such as MBA, master's degrees in various technology fields, or PhD support entrepreneur to be more capable of understanding emerging technologies, spotting the entrepreneurial opportunities in these fields and also developing innovative solutions.

- Specialized entrepreneurship training: Some of the interviewees had participated specialized training programs focusing on entrepreneurship, management, marketing, sales or finance. Most of them prefer to acquire such soft skills through learning by doing.

Practical Experience:

- Work experience and internships: Working in relevant industries, working in university labs, engaging in technology development practices, internships in international and national organizations, working as a consultant in various sectors provides entrepreneurs with insights about the acute problems of firms, hence spotting the entrepreneurial opportunities. Such an experience also helps entrepreneurs to acquire competences such as taking initiative, resource mobilization and mobilizing others.

- Starting Small Ventures: Trial and error are another efficient and common way of acquiring resources. Many entrepreneurs that were interviewed emphasized that they acquire most of their entrepreneurial competences by immediately engaging in entrepreneurial activities. Learning through feedback especially from customers, is one important path to understand the market and customers.

- Engaging in active search: Searching for new developments and new product/service launch, for emerging new technologies and technological knowledge, following the trends, having an open eye on industrial, economic, cultural and legal/regulatory changes is critical for entrepreneurs to be creative and innovative. Engaging in active search on global and local trends, changes in the markets, industries and technologies is an efficient and a common path of acquiring competences such as spotting entrepreneurial opportunities, creativity, flexibility, and agility.

Networking and Community Engagement:

- Mentorship: Mentors are critical sources of experience and feedback in entrepreneurship ecosystems. Most of the entrepreneurs that were interviewed in Turkey emphasized on how they benefited from mentors to learn on entrepreneurial processes and to acquire some necessary competences such as spotting opportunities, taking initiative, mobilizing resources, and mobilizing others. Mentors provide entrepreneurs with guidance and practical advice.

- Guidance from Experienced Entrepreneurs: Among the mentors the most important group is the experienced entrepreneurs. Learning from experienced entrepreneurs to solve current

challenges and problems is valuable for nascent entrepreneurs. Guidance from experienced entrepreneurs are also critical for competences such as coping with uncertainty, ambiguity, and risk, flexibility and resilience. As one of the young entrepreneurs that was interviewed emphasized "it is important to know that you are not the only entrepreneur facing that problem".

- Incubators and Accelerators: Incubators and accelerators are valuable support mechanisms designed by private and public initiatives to support young and inexperienced entrepreneurs. They provide entrepreneurship training, mentoring, networking, and accessing to funding and investors. Although they are important, only a few of the entrepreneurs that were interviewed participate in such programs; however, they also mentioned their regret of not benefiting from these support mechanisms. Insights from the interviews indicate that entrepreneurs lack awareness and knowledge about these programs. Incubators and accelerators help entrepreneurs to acquire competences such as taking initiative, mobilizing resources, mobilizing others, and planning and management.

Other paths:

- Teaming: Finding team members with necessary core skills and competences is the most common way for entrepreneurs to acquire the competences absent in the initial team. When the team lacks a key technical or soft skill, the best way to acquire it emerges as adding a team member with the relevant skill. While some interviewees were able to do this at the initial phase to run their venture smoothly, some of them regret that they did not have a software engineer or a sales or marketing person in the team.

- Working with consultants and consultancy firms: Some interviewees emphasized that they map the necessary technical skills for targeted technologies and compare them to their skills. To access the missing key skills easily, they hire the best professionals in that area as consultants. Other than technical issues, some participants also get paid coaching services on some managerial topics to ease their scale up phase, in addition to getting help from mentors. Other than working directly with the CEO, the management coaches also facilitate some team meetings and help establish communication and strategy tools in the company.

- Partnerships and certifications: Insights from the interviews indicate that lacking sales knowledge and expertise is the biggest challenge for many new ventures. Some new ventures overcame this problem by partnering reputable companies in their sectors. Another path to acquire trust and credibility in the market is certifications. These certiciates are intangible resources for startups that can be used as proof of quality and being competent. Such certificates increase the credibility of new ventures and their products and support their success. One entrepreneur mentioned that "rather than trying to explain these issues, we directly show the certificates".

- Intrapreneurial activities: To foster agility and creativity, some participants noted organizing hackathons within the company, where they give challanges to the employees and look for innovative solutions and product ideas. They also empower the employees by giving responsibilities based on new products and technologies and making the employee the owner of the project or process, including the very young employees.

Facilitator:

Open mindedness, resilience and coachability are facilitators for acquiring competences from practical experience and networks and community engagement.

- o In order to learn from practical experience resilience is very critical. Resilient entrepreneurs can face the challenges in the real world and do not hesitate to experiment.

- o Open mindedness and coachability are key to acquiring resources through engaging in networks and communities, while interacting with others they can gain new competences and knowledge.

Insights from the interviews indicate that the most important and efficient path to acquire entrepreneurial competences is learning by doing or in other words practical experience. Most of the interviewees emphasize that they learn how to be entrepreneurial after starting their entrepreneurial journey. However, most interviewees admit the importance of formal education. Especially, formal university education in engineering and natural sciences provides entrepreneurs with a compellent knowledge and understanding of technological trends. Acquiring individual level competences are achieved through three paths: practical experience, formal education and networking and mentorship.

Networking and mentorship enable entrepreneurs to develop new perspectives, better understand the market and customers, discover customers, recraft their business models and make partnerships. However, the data collected through the interviews clearly shows that individual level competences are not sufficient to be successful because entrepreneurship is a team-game. Entrepreneurial ventures also acquire necessary resources and competences through finding team members with necessary competences that are absent in the initial team, working with consultants and consultancy firms, making partnerships with incumbent companies or getting certification to increase their credibility in the market, and finally through organizing intrapreneurial activities for continuous development.

Ukraine

The data collected from Ukrainian entrepreneurship ecosystem reveals that the path of each entrepreneur is individual, while each of the interviewed business owners has a similar traits, such as calm and cool mind, strength of spirit, the desire to change the world for the better as much as possible, resilience, a high level of responsibility, empathy. The first key step is to have the right mindset for business. Ukrainian entrepreneurs acquire the competences and attitudes that need to be successful through 3 main paths as the ones in other ecosystems. These common paths are Formal Education and Training, Practical Experience and Networks and Community Engagement. The unique paths that are followed by the entrepreneurs in the ecosystem are categorized under Other Paths. These paths directed by individual efforts to develop competences and attitudes.

Practical experience:

- Learning from experience
- Strong execution
- Competitor analysis

Formal education and training:

- Higher education programs
- Advanced training

ENTREPRENEURIAL COMPETENCES AND ATTITUDES

Facilitators: Discipline, hardworking, stress resistance, high level of responsibility

Networking and community engagement:

- Mentorship
- Communication with clients and team
- Partnership

Other paths:

- Investing in soft skills development
- Investing in financial literacy
- Investing in sales team
- Engaging in strategic planning and management

Figure 20: Main paths to acquire entrepreneurial competences and attitudes in Ukraine

Formal Education and Training:

- Formal Education: All of the surveyed entrepreneurs have one or more higher education degrees. In addition to professional knowledge, university education teaches systematic thinking, hard work, teamwork, and leadership.

- Advanced Training: All interviewed entrepreneurs have an MBA or other completed additional professional training courses. Businessmen never stop learning new things.

Practical experience:

- Learning Through Experience: Theory is good, but practice is even better. Entrepreneurs learn a lot of knowledge and insights about how to do things efficiently and correctly from practical actions while running a business. Working on mistakes is an essential element of future success.

- Strong Execution: Strong execution ensures that the business is able to effectively implement its strategies and plans, leading to the accomplishment of its goals and objectives. Businesses

that prioritize and excel in execution are better positioned for long-term success. They can navigate challenges more effectively, capitalize on opportunities, and build a sustainable and resilient operation.

- Competitors Analysis: Business is a sport. To stay ahead, you need to know your competitors well. Competitor analysis helps to gain a comprehensive understanding of the market environment and develop successful strategies in the competitive business landscape.

Networks and Community Engagement:

- Mentoring: The vast majority of surveyed entrepreneurs (8/10) have used or are using mentoring services. A mentor is an experienced professional who provides informal guidance to beginners as well as experienced professionals for career growth.

- Communication with Clients and Team: In running a business, communication is crucial. Understanding each other, discussing problems and challenges, and having different perspectives on a situation improves internal teamwork and cooperation with clients. through proper communication and strong execution, all parties (funder, employees, client) get the best possible experience.

- Partnership: Eight out of ten entrepreneurs work in partnership. A partnership is an arrangement where parties, known as business partners, agree to cooperate to advance their mutual interests. Main benefits: gaining experience, expertise and knowledge.

Other paths:

- Investing in soft skills development: Such as developing a mindset and set of skills such as communication skills, empathy, openness to new experience.

- Investing in financial literacy: Finance is a lifeblood of each industry. They determine how resources, such as capital, labor, and materials, are allocated within the business. Proper financial management is another important component of this organism called a successful business.

- Investing in sales team: Sales play a pivotal role in business. The primary function of sales is to generate revenue for the business. Sales teams work to sell products or services to customers.

- Engaging in strategic planning and management: Strategic planning is not only about directed steps and acts in making business, it is about organization's mission and vision, comprehensive

approaches and a longer time horizon. Management is embedded in every business process: from human resources management to financial management.

Facilitator:

Discipline, hardworking, stress resistance, high level of responsibility are facilitators for acquiring competences from other paths such as investing in acquiring soft skills, engaging in strategic planning and management, investing in gaining financial literacy.

- o In order to acquire soft skills through these paths self-discipline hardworking and high level of responsibility are required.

- o They also facilitate the acquisition of competences through engaging in planning and management.

Conclusion to the analysis of paths

The analysis of the paths to acquire competences and attitude to succeed their entrepreneurial endeavor across six targeted countries - Bulgaria, France, Ireland, Greece, Turkey, and Ukraine – revealed that although entrepreneurial landscapes across these countries are distinct in their institutional, cultural, and economic contexts, entrepreneurs follow similar paths. The main paths are formal education and training, exposure to practical experience as professionals or entrepreneurs, and network and community engagement. The analysis of these paths allows to observe a complex yet coherent picture of European entrepreneurship. While unique in their contexts and challenges, the entrepreneurs in these ecosystems find some common ways of acquiring the competences and attitudes that lead them to success.   From the patterns emerged form the analysis of paths to acquire competences and attitudes, we can highlight the following findings:

- **Formal education and training**: Entrepreneurs across the six ecosystems benefit more from universities and other HEIs to acquire competences that they need to create and successfully run a new venture. Almost all of the interviewees across these ecosystems have at least an undergrad diploma in fields such as engineering, management, natural sciences, social sciences. Most of these entrepreneurs have master level education. Spotting opportunities and valuing ideas, creativity, hence discovering an entrepreneurial opportunity requires domain knowledge. Furthermore, higher education degrees positively influence self-awareness and self-efficacy,

and confidence of entrepreneurs to start a new venture and successfully run it. Despite the importance and necessity of formal education in specialized diploma programs, most of the time they are not sufficient to have the competences and attitudes to start and run a new venture. Specialized training on certain topics including entrepreneurship, certification programs, lifelong education and training are key for continuous improvement and to overcome the challenges of starting and running a business. For acquiring these competences, entrepreneurs benefit from advanced training programs provided by universities and other HEIs or specialized institutes. The successful entrepreneurs in these ecosystems commonly follow the path of formal education and training to acquire the competences that help them overcome challenges of starting a new venture and growth.

- **Practical experience**: Hands-on experience to learn-by-doing is critical to acquire competences and attitude for success. Professional experience or internships help entrepreneurs to understand the problems and gaps in specific sectors and markets, hence, to discover entrepreneurial opportunities. Entrepreneurial experience or starting a new venture is an opportunity for entrepreneurs to learn by doing and by experimenting.   Understanding of their clients, placing their needs at the core of their strategies and innovations is vital to deliver solutions that are easily adopted by the market. This customer focus is complemented by strong team-building and leadership skills. Many entrepreneurs, particularly in Turkey and Ukraine, have not limited their ambitions to local markets but have sought to expand globally, adapting their offerings to international markets. Successful entrepreneurs in six ecosystems commonly follow the path of practical experience to acquire the competences that help them overcome challenges of starting a new venture and growth. The combination of formal education and training and professional experience allows entrepreneurs to achieve the proper maturity level leading to the creation of their venture.

- **Networks and community engagement**: Support organizations, such as incubators and accelerators, play a crucial role for entrepreneurs to acquire competences and attitudes. Such support organizations provide mentorship and guidance to entrepreneurs. Furthermore, such support organizations enable entrepreneurs to interact with ecosystem stakeholders including investors. Entrepreneurs also benefit from the communities created by such organizations; peer-to-peer interactions are enabled in

such communities. These organizations help bridge the gap between ideas and market-ready products, by emphasizing the importance of competence development over formal education. However, entrepreneurs need to adopt an open-minded approach and be coachable to guarantee the success of the available support from networks and communities.

- **Other paths:** Although the paths that entrepreneurs follow to acquire competences and attitudes which are categorized under "Other Paths" vary from one ecosystem to another, they share some commonalities. One common path is self-learning or self-directed learning. Entrepreneurs in these ecosystems invest in gaining soft skills, financial literacy, technical proficiency through self-directed learning and reflection. Another path mentioned is teaming and teamwork. Hiring new team members who have competences that startups have not yet acquired is one of the key options to acquire competences and attitudes at the venture level.

Comparative analysis, global conclusions, exploitation of the findings and next steps

The ExcellEnt project explores novel ways to capture, preserve, curate, organise and communicate sets of unstructured entrepreneurial experiences, stories, narratives with an emphasis to those of younger audience. They can constitute a shared resource that people can augment, and that individuals as well as institutions can delve into, to find inspiration for new ways of conceptualising and promoting entrepreneurship, and how these new ways can be reflected into every-day practices and policies, and foundations for visions of our common European future.

Task **1.2** is one of the early steps towards to realize the aims and objectives of the ExcellEnt project. This task covers a comprehensive analysis of the interview results gathered in Task 1.1., from the perspectives of entrepreneurial competences and attitudes. In this deliverable D 1.2, the results of this comprehensive analysis are revealed and discussed. Throughout this deliverable the highlighted competences and attitudes that make entrepreneurs successful across six ecosystems were presented. Furthermore, the paths that entrepreneurs follow to acquire these competences and attitudes are revealed. Thus, the most important entrepreneurial competences and attitudes that are common and

divergent across six targeted ecosystems- Bulgaria, France, Ireland, Greece, Turkey, and Ukraine –as well as the most efficient paths to acquire them are identified.

Our analysis reveals that, among the competences in the EntreComp Framework, "motivation and perseverance", "coping with uncertainty, ambiguity and risk", "working with others" and "learning through experience" are the most important common competences across six ecosystems. The analysis of entrepreneurship competences across the 6 contexts revealed some emergent important entrepreneurship competences in addition to the ones covered in the EntreComp Framework. These are resilience, coachability, flexibility and agility, customer centricity, technical or domain specific skills, openness to experience, continuous learning, sales skills, strategic orientation, complementarity in teams, and valuing employees. The emergent competences come from different levels of analysis including the individual, team, and organizational levels.

The analysis of the paths that entrepreneurs follow to acquire competences and attitude across six targeted countries reveals that although entrepreneurial landscapes across these countries are distinct in their institutional, cultural, and economic contexts, entrepreneurs follow similar paths. The main paths are formal education and training, exposure to practical experience as professionals or entrepreneurs, and network and community engagement. Entrepreneurs across the six ecosystems benefit more from universities and other HEIs to acquire competences that they need to create and successfully run a new venture. Hands-on experience to learn-by-doing is critical to acquire competences and attitude for success. Professional experience or internships, entrepreneurial experience help entrepreneurs to understand the problems and gaps in specific sectors and markets, hence, to discover entrepreneurial opportunities. Support organizations, such as incubators and accelerators, play a crucial role for entrepreneurs to acquire competences and attitudes. Such support organizations provide mentorship and guidance to entrepreneurs as well as enable them to interact with ecosystem stakeholders including investors.

The integration and analysis of narratives collected through the interviews with successful entrepreneurs and ecosystem members, presented in the current deliverable, will be used as a baseline for the subsequent project activities. They will allow to initiate larger scale discussions with aspiring entrepreneurs and support organizations, through dedicated workshops, that will in turn allow to create recommendations and action plans to create opportunities for aspiring European entrepreneurs. These

will be subsequently revealed in "D1.3 Entrepreneurial best practices report" and respectively "D1.4 Entrepreneurial knowledge sharing across EU ecosystems workshops".

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