

EntreComp Questionnaire for Entrepreneurship Competencies

Subjects: Psychology

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The European Entrepreneurship Competence Framework (EntreComp) offers a comprehensive description of the knowledge, skills, and attitudes that people need to develop for an entrepreneurial mindset. Entrepreneurship competencies have usually been equated to management skills, but it is assumed that entrepreneurship activities cannot be narrowed to the management of business, since it requires a wider range of competencies. In particular, the European Council adopted the concept of entrepreneurship competencies as a set of abilities with the potential of shaping society through value creation at a social, cultural, or financial level with the sense of entrepreneurship as one of the eight key competencies necessary for a knowledge-based society.

Keywords: entrepreneurial mindset ; entrepreneurial skills ; entrecomp ; self-assessment ; confirmatory factor analysis

1. Introduction

The European Entrepreneurship Competence Framework (EntreComp) offers a framework of transversal competencies that are applicable to various contexts and allows the promotion of entrepreneurial competencies to face challenges and find solutions in a sustainable way. In this regard, it should be noted that one of the competencies included in the EntreComp framework, in the Ideas and Opportunities dimension, is Ethical and Sustainable Thinking, defined as: assessing the consequences of ideas that bring value and the effect of entrepreneurial action on the target community, the market, society, and the environment. Reflects on how sustainable, long-term social, cultural, and economic goals are, and the course of action chosen. Act responsibly.

EntreComp aims to develop entrepreneurship competencies so the relevance of having an instrument that measures the self-perception (and consequently the potential evolution) of them is key. Subjective assessments of self-perceived competencies may not provide an accurate estimation of performance, but nevertheless, it is relevant for the objective of developing an entrepreneurial mindset. As far as research results in the field, it was noticed that actions were more influenced by what people believe they can do rather than with objective facts ^[1].

In view of the lack of specific tools to evaluate the self-perception of entrepreneurship competencies, this research assesses the validity and reliability of the self-perceptions of the entrepreneurship competencies questionnaire proposed by Armuña ^[2], which aims to help reduce the existing lack of psychometric measuring instruments.

Considering the above, the researchers hypothesized the following: (1) the questionnaire proposed showed a four-dimensional model (Ideas and Opportunities, Personal Resources, Specific Knowledge, Into Action) according to the proposed model by Armuña ^[2]; (2) the questionnaire proposed has a good validity based on a positive relationship with Entrepreneurial Intention and Intrapreneurial Self-Capital, and (3) the questionnaire proposed has good internal consistency (reliability).

2. Current Insights

The conception of entrepreneurship as a competency, which is applicable to a wider range of activities than launching a new business, including general professional and personal development, has promoted the aspiration to integrate these capabilities as part of the horizontal students' curricula along the entire education cycle ^{[3][4][5][6][7]}. In this sense, the EntreComp framework can be seen as a practical and flexible tool, as it is designed to be adapted and applied for promoting and enabling individuals and organizations to be entrepreneurial.

Nevertheless, as stated, this framework is a starting point, because their authors suggest that it must be tested, developed, and potentially improved by further research. In this sense, although from both perspectives of policy and

academic research, the basis of EntreComp has had an echo, with a primary focus on the development of tools to improve the competencies in classes ^{[8][9]} to adapt the framework to particular targets, such as public and private sector employees ^[10], or to inspire practices in specific sectors or entrepreneurship education programs ^[11], but there is a lack of specific tools to evaluate the self-perception of entrepreneurship competencies and the potential evolution.

This research assessed the psychometric properties of the EntreComp Questionnaire developed by Armuña ^[2] with a sample of students from different universities and areas of knowledge. Results showed a four-dimensional model (Ideas and Opportunities, Personal Resources, Specific Knowledge, Into Action) according to the proposed model by Armuña ^[2].

The first factor, "Ideas and Opportunities", is made up of the same five competencies indicated by Armuña's ^[2] and EntreComp's framework (spotting opportunities, creativity, vision, valuing ideas, and ethical and sustainable thinking).

The second factor, "Personal Resources", was composed of six items (motivation, perseverance, mobility resources, leadership skills, communication skills, multidisciplinary skills, making decisions dealing with uncertainty, ambiguity, and risks competence). A difference with the results of Armuña ^[2] is that self-efficacy could not be included because it did not have sufficient load in any factor. Self-efficacy is the belief in one's ability to be successful in specific situations or when performing a task ^[12]. Self-confidence, in specific tasks, is a relevant personal resource, as is widely documented by research in different spheres of functioning ^{[13][14]}. It is probable that self-efficacy weighs in several factors since it is a more global and non-specific factor. However, self-efficacy is a key cognitive predictor of entrepreneurial intention ^[15], so the researchers consider that future studies should improve this item and include it in the questionnaire.

In the Armuña model ^[2] and EntreComp framework, the competency of "Making decisions dealing with uncertainty, ambiguity and risks" is an Into Action factor, but the results showed a higher loading on the "Personal Resources" factor. In fact, according to previous research, this item seems to be more related with individual variables, as they have shown that tolerance of ambiguity and decision making under uncertainty are individual differences and trait personalities, related with entrepreneurship ^{[16][17]}.

The third factor, Specific Knowledge, included the three competencies from the Armuña model ^[2] in addition to "Development of new products and services", and "Networking skills". Other competencies of this factor were the perception of digital, legal, financial, and economic technical knowledge. Developing new products and services requires that people have the necessary technical knowledge, so it seems coherent that they all belong to the same factor. In the same way, Network skills could be considered as specific knowledge required to solve problems and deal with a complex environment. In recent years, the number of publications on online training and skills development has increased as a key element to enhance employability ^{[18][19]} so it is consistent that this ability can be perceived as specific knowledge.

The fourth factor, Into Action, is like the Armuña model ^[2] as it included five of the seven original competencies.

Despite some small differences, the structure of the questionnaire is very similar to the one proposed in the original Armuña model ^[2] and corresponds to the ideas of the EntreComp model, so the researchers can conclude that the studied questionnaire presents strong evidence of constructed validity.

Evidence of validity based on relationships with Entrepreneurial Intention and Intrapreneurial Self-Capital showed high positive correlations, being higher in the case of the IC. These results support the findings of other studies about the relationship between individual variables, skills, and entrepreneurial intention ^{[20][21][22]}.

Finally, analysis of EntreComp's internal consistency showed appropriate values according to standard recommendations that were confirmed by Cronbach's alpha and composite reliability (CR) indices for each subscale.

The AVE values were close, although less than, 0.50 for all subscales, except for Into Action, for which the AVE value was much lower. This implies a certain limitation of the instrument, since it indicates a lack of discriminatory validity of the subscales that may be due mainly to the high correlations between the factors. However, this result agrees with the theoretical framework of EntreComp, which highlights the interconnection between the competency dimensions and with previous studies that seek the grouping of competencies, and which obtained similar results regarding the high permeability of the limits between entrepreneurship competencies ^[23].

If the researchers consider the comparative analysis of 12 existing entrepreneurial skills self-assessment tools ^[24], Armuña's model questionnaire is like other instruments in that it is a tool to meet the needs of entrepreneurial education and focus on students and graduates of higher education. In terms of purpose and content, it is the only instrument that assesses the self-perception of entrepreneurial competence. In relation to the theoretical framework of competencies, it

has the advantage of being the only instrument that addresses the entire set of EntreComp competencies. Another advantage is that it presents is that it is an instrument that has psychometric validation, showing good reliability and validity of the data. It would be appropriate for future developments of the instrument to include illustrative diagrams, such as the spider diagrams used in other tools, to visualize strengths and areas for improvement.

3. Conclusions

The EntreComp framework proposes a set of skills for the development of an entrepreneurial mind that allows people to act and transform ideas and opportunities into value in a sustainable way. This research has important practical implications since it fills the gap of specific tools to assess the self-perception of entrepreneurship competencies. The questionnaire is available upon request to the researchers [2].

The questionnaire presented is a tool to assess the entrepreneurship competencies included in the EntreComp framework, and competencies to generate social, cultural, or economic value at work or in society and that allow personal and professional development. It is a useful resource for entrepreneurial education and employers that allow the identification of an entrepreneurial profile with a broad interpretation of what it means to be an entrepreneur. It allows the researcher to identify a level of competency to be able to develop strategies and actions, and to be able to follow their progress.

Based on the research and the challenges in promoting sustainability education and lifelong learning, future efforts should be aimed at consolidating the EntreComp Questionnaire and expanding it with areas that would allow sustainability competencies to be evaluated more specifically. Thus, the “Ethical and sustainable thinking”, competence of the “Ideas and opportunities” factor of the EntreComp framework could include the “Embodying sustainability” values (valuing sustainability, supporting fairness, promoting nature) from GreenComp. The “Personal resources” factor (EntreComp framework) could include the areas “Embracing complexity in sustainability” (systems thinking, critical thinking, problem framing) and “Envisioning sustainable futures” (future literacy, adaptability, and exploratory thinking) and finally, the “Into Action” factor could include the GreenComp’s area “Acting for sustainability” giving rise to a new area called “In Action for Sustainability” which reflects the abilities to transform ideas into reality and act as agents of change, inspiring others to try to achieve sustainability.

Developing entrepreneurship and sustainability competencies is one of the European Commission’s key priorities for education and lifelong training. This research and its conclusions are a hopeful starting point for the development of evaluation tools that allow the integration of the EntreComp and GreenComp frameworks to provide an education and training system that help learners to acquire knowledge, skills, and attitudes to develop sustainable entrepreneurship competencies.

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