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# ENTREPRENEURIAL AWARENESS AND SPIRIT OF TEACHERS IN CROATIA

**Abstract**

**Purpose:** Entrepreneurial awareness and spirit are necessary for shaping and using entrepreneurial capacities in every national economy. An encouraging climate for the development of entrepreneurial qualities should be present in all phases of the upbringing and education of young people, where teachers play a key role. The aim of the work is to investigate entrepreneurial awareness and spirit of teachers in Croatia.

**Methodology:** The research was conducted on a sample of 540 teachers (from primary, secondary, and higher education institutions) in Croatia. The methodological framework is derived from the Global Entrepreneurship Monitor (GEM) research, from which entrepreneurial indicators reflecting entrepreneurial awareness and spirit as key drivers of entrepreneurial endeavors and social progress have been extracted.

**Results:** The research results indicate the potential and confirm the need for the introduction of entrepreneurial education at all levels of education in Croatia.

**Conclusion:** The main scientific contribution of the work lies in the analysis of contextual and individual GEM indicators of entrepreneurial activity through the prism of teaching staff as the bearers of entrepreneurial education necessary for the development of entrepreneurial spirit in the wider social community, and a conceptual model based on correlations between formal entrepreneurial education, entrepreneurial awareness, and the spirit of teachers in Croatia. Research limitations and guidelines for future research are also outlined in the paper.

**Keywords:** Entrepreneurial awareness, entrepreneurial spirit, entrepreneurial characteristics, teachers' perceptions, Croatia

## *1. Introduction*

Entrepreneurial activity is the basic premise of creating new values useful in the economic and wider social context (Global Entrepreneurship Research Association [GERA], 2023; Gibb, 2011; Lumpkin & Dess, 1996; Porter, 1990). Entrepreneurship implies a new activity (Guth & Ginsberg, 1990; Zahra, 1991; Zahra, 1993; Sharma & Chrisman, 1999) that changes market flows (Kirzner, 1999), industrial structures (Swann, 2009; Sharma & Chrisman, 1999), and social circumstances (Miller, 1983). Entrepreneurship encourages change and is a response to change (Gibb, 2011; Drucker, 1985; Shane, 2002). According to Schumpeter's model of "creative destruction" (Schumpeter, 1976) and Christensen's model of "creative creation" and "disruptive innovation" (Christensen, 2002; Christensen et al., 2006),

as well as contemporary theories of the equilibrium role of entrepreneurship (Boudreaux, 1994), change presupposes social growth and development.

For new activities of entrepreneurial processes to lead to socially positive change, it is necessary to develop entrepreneurial awareness and entrepreneurial spirit in society. Culture and society are determinants of individual behavior, including entrepreneurial behavior (Levie & Autio, 2008). An entrepreneurial society emphasizes the importance of entrepreneurship, encourages the development of entrepreneurial competencies and the involvement of all stakeholders in entrepreneurial processes, and emphasizes their social utility (Audretsch & Thurik, 2004; Lumpkin & Pidduck, 2021). Entrepreneurial awareness and entrepreneurial spirit are today's most valuable resources necessary for economic development (Read et al., 2009).

The main goal of this research was to examine the entrepreneurial awareness and spirit of teachers in Croatia, including teachers from primary, secondary, and higher education institutions. The research was conducted because the GEM Entrepreneurship Index (GESI) is a relatively new methodological framework (2017/2018), and the entrepreneurial awareness and spirit of teachers in Croatia have not been sufficiently researched to date. Teachers' perceptions and experiences can have a significant impact on the development of an entrepreneurial culture in society, as they play a key role in the transmission of entrepreneurial education. In accordance with the stated objective, the following research questions were formulated:

RQ1: What is the entrepreneurial awareness of teachers in Croatia?

RQ2: What is the entrepreneurial spirit of teachers in Croatia?

RQ3: Is there a significant relationship between the level of formal entrepreneurial education of teachers and their entrepreneurial awareness?

RQ4: Is there a significant relationship between formal entrepreneurial education of teachers and their entrepreneurial spirit?

The research provides insight into a previously neglected part of the GEM framework, which is important for understanding the entrepreneurial potential within the Croatian education system. The research confirms that formal entrepreneurial education acts as a key predictor of teachers' entrepreneurial awareness and spirit. The results presented provide a valuable contribution to educators, researchers, and policymakers in education.

## 2. Theoretical framework

Below is a brief overview of key concepts; entrepreneurial awareness (2.1), entrepreneurial characteristics, spirit and potential (2.2), and the role of entrepreneurial education (2.3).

### *2.1 Entrepreneurial awareness*

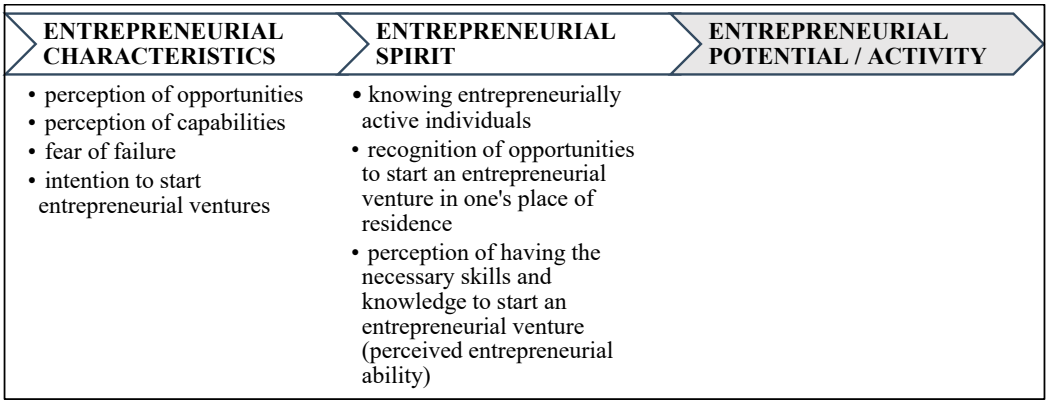
Culture represents the collective awareness of a society, which includes established values, ways of thinking, ways of making decisions, and behavioral patterns of members of that society (Armstrong et al., 2017, p. 141; Solomon et al., 2015, pp. 506–507; Levie & Autio, 2008, pp. 16–17). The GEM methodological framework distinguishes general awareness from entrepreneurial awareness summarized in entrepreneurial culture as an important factor of the entrepreneurial environment. In the entrepreneurial context, entrepreneurial awareness is observed through the prism of perception about entrepreneurial activity, entrepreneurs, and their role in society (Levie & Autio, 2008, p. 17). Entrepreneurial culture, which reflects the awareness of individuals in society about entrepreneurship and entrepreneurs, has a great influence on the ambitions and aspirations of entrepreneurs and the necessary support for entrepreneurial activity (GERA, 2023; Singer et al., 2021; Kelley et al., 2016). Unlike general social values and attitudes, society's perception of entrepreneurship and entrepreneurs is subject to change (Etzioni, 1987, as cited in Levie & Autio, 2008; Singer et al., 2022). It depends on specific social circumstances and changes depending on them. A positive opinion of society about entrepreneurship largely determines the entrepreneurial spirit and the intention of entrepreneurial activity of the wider population (Ajzen, 1991, as cited in Levie & Autio, 2008; Singer et al., 2022).

The GEM research results showed that the lack of entrepreneurial culture, which is expressed by a strong fear of failure, a lack of faith in entrepreneurial abilities, and a low perception of opportunities in the environment, is responsible for poor entrepreneurial performance and slow recovery from recessionary events (The World Economic Forum [WEF], 2016).

### 2.2 Entrepreneurial characteristics, spirit, and potential for entrepreneurial activity

Society's perception of entrepreneurship indicates the desirability of entrepreneurial activity, while the self-perception of individuals indicates the likelihood of undertaking entrepreneurial activity. The GEM project assesses the probability of entrepreneurial activity depending on the perception of individuals related to the opportunities in the environment and the possession of the necessary skills for entrepreneurial activity. At the same time, the fear of failure, which can prevent individuals from starting business ventures, is also assessed, and intentions to start business ventures in the next three years are examined. The determinants of entrepreneurial activity are viewed as entrepreneurial characteristics of the population of actual and potential entrepreneurs (Kelley et al., 2016, pp. 12–16; GERA, 2023, pp. 37–46). An overview of entrepreneurial characteristics, entrepreneurial spirit, and potential for entrepreneurial activity is shown in Graph 1.

***Graph 1 Entrepreneurial potential for entrepreneurial activity (according to GEM)***




*Source: Kelley et al. (2016, pp. 12–16); GERA (2018, pp. 29–30); GERA (2023, pp. 37–46); Bosma et al. (2017, p. 67); Singer et al. (2019, pp. 21–24)*

#### 2.2.1 Entrepreneurial characteristics and traits

Recognizing the importance of "the role of entrepreneurship in the economic growth of national economies, the emphasis is placed again on Schumpeter's qualities of boldness, creativity, and imagination necessary for successful entrepreneurial activity, exploiting the entrepreneurial potential described by entrepreneurial characteristics" (Kirzner, 2008, p. 3). Pinchot (1987) points out that imagination is the basis of the competitiveness of entrepreneurial endeavors. It is a prerequisite for proactivity and therefore innovation. Imagination enables the projection of the future and its implementation within existing market flows and organizational structures. Creativity, like imagination, is difficult to define, but when these two determinants of entrepreneurial individuals are placed in an entrepreneurial context, a clear idea of their entrepreneurial usefulness is obtained (Swann, 2009).

Differences in personality determine differences in motivation and consequently differences in entrepreneurial processes (Shane, 2002; Shane & Venkataraman, 2000; Shane et al., 2003). It has been observed that bolder individuals are more optimistic and self-confident. The high failure rate of start-up ventures indicates that novice entrepreneurs often lack sufficient information and exhibit high levels of optimism. It has also been observed that a high degree of self-efficacy, an internal locus of control, and a desire for achievement are frequently associated with the willingness to take risks in a new entrepreneurial activity (Shane & Venkataraman, 2000). Self-efficacy refers to the perception of the ability to apply personal resources, knowledge, skills, and competences to successfully carry out a specific activity (Bandura, 1997). In the aforementioned context, the observed self-efficacy can be explained as the self-confidence needed to successfully perform assigned tasks (Shane et al., 2003). Acceptance of uncertainty

is also an important prerequisite for entrepreneurial activity, the circumstances of which are unpredictable and the outcome uncertain. It is assumed that entrepreneurs are more inclined to accept risk, which is an inevitable part of their role (Shane et al., 2003). Among the characteristics that determine the entrepreneur's motivation is the internal locus of control, which presupposes the individual's perception of the extent to influence on the outcomes of certain activities. Individuals with a pronounced internal locus of control perceive control over events in their environment. They believe that their characteristics and the activities they undertake have an impact on the desired outcomes (Rotter, 1966; Rotter, 1990). Self-efficacy, the acceptance of uncertainty and risk, and the perception of control are the basis of the entrepreneurial characteristics described by the GEM model and thus a prerequisite for entrepreneurial activity (Graph 1).

#### *2.2.2 Entrepreneurial spirit*

Entrepreneurial potential is represented by individuals who perceive good opportunities in the environment and believe that they possess the necessary skills and knowledge for entrepreneurial activity (GERA, 2017, pp. 17–21). According to the GEM methodology, the determinants of entrepreneurial potential are also the determinants of the entrepreneurial spirit of individuals (GERA, 2018, pp. 29–30).

According to the 2017 GEM methodological framework, the determinants of entrepreneurial activity, i.e., entrepreneurial characteristics, are called entrepreneurial spirit, which provides an insight into the potential for entrepreneurial activity of individuals, the realization of which depends on personal factors and environmental conditions. The Entrepreneurship Spirit Index (GESI – GEM Entrepreneurship Spirit Index) is measured through variables from the standard GEM indicators of entrepreneurial activity (Graph 1).

### *2.3 Entrepreneurial education role*

Entrepreneurial education and entrepreneurial training are the most frequently mentioned factors of the entrepreneurial environment related to the improvement of the entrepreneurial structure (Levie & Autio, 2008). Learning about entrepreneurship, for entrepreneurship and through entrepreneurship is important for the personal and professional development of the individual and thus of the entire society (Lackéus, 2015; Oberman Peterka, 2013; Singer et al., 2022, p. 79).

Acquiring entrepreneurial knowledge and skills helps individuals recognize and exploit opportunities in the environment, establish and manage entrepreneurial ventures, achieve satisfactory growth rates, and foster stimulating entrepreneurial attitudes and behavioral patterns among the wider population (Levie & Autio, 2008; Lackéus, 2015).

In entrepreneurship literature, the introduction of entrepreneurial education into technical education modules and business practices is considered especially useful. Hisrich et al. (2011) highlight the knowledge of the target market, and the technology needed to satisfy its specific desires with fundamental entrepreneurial knowledge. If companies do not adapt their way of working to revolutionary technological solutions in the environment, they will not be able to respond to the increasingly complex demands of users (Dutta et al., 2016).

The World Economic Forum (WEF, 2014) continuously warns of the need to change the perception of European society about entrepreneurship. Connecting entrepreneurs with schools and universities is considered one of the long-term useful ways of improving entrepreneurial awareness and the necessary skills for entrepreneurial activity. By including business practice in educational structures, the gap between educational programs and the needs of the labor market could be reduced. At the same time, teachers and professors should be seen as entrepreneurship trainers and should be trained for this responsible role. By introducing people and examples from practice into the performance of the teaching process, entrepreneurial thinking and action can be encouraged among teaching staff and students. By spreading entrepreneurial awareness through networks of local schools, universities, and entrepreneurs, it is possible to influence the general awareness of society (WEF, 2014; Lackéus, 2015; Oberman Peterka & Salihović, 2012).

In the 2020 Action Plan for Entrepreneurship, the European Commission points out that Europe needs more entrepreneurs and defines entrepreneurial education as one of three areas in which changes, updating, and intensive action are needed. The action plan calls on the member states of the European Union to make entrepreneurship education a mandatory part of education at all education levels, which can most effectively influence the at-

titudes of European citizens toward entrepreneurship (Alpeza et al., 2022).

Although education and training for entrepreneurship are most frequently mentioned in entrepreneurship theory as a determinant of entrepreneurial activity, research based on the correlation has been a neglected type of entrepreneurial research for a long time (Levie & Autio, 2008).

The GEM research results indicate a positive correlation between education and entrepreneurial activity (Singer et al., 2022; GERA, 2023). GEM research has shown that, along with the advantages of informal investment, education plays a key role in starting entrepreneurial ventures. Specialized training and entrepreneurial education affect the possibility of commercializing the opportunity, and the social desirability of entrepreneurship, as well as the positive perception of potential entrepreneurs, is a great incentive for entrepreneurial activity (Reynolds et al., 2000; Singer et al., 2022, pp. 49–50; GERA, 2023, p. 92). An appropriate entrepreneurial culture and an entrepreneurial education system contribute to the perception of opportunities in the environment and thus to greater entrepreneurial aspirations and expectations of entrepreneurially oriented individuals (Levie & Autio, 2008). If entrepreneurial education is made a mandatory part of education at all education levels, the entrepreneurial culture and spirit of the wider community can be improved (Alpeza et al., 2022).

#### *2.3.1 GEM grades of entrepreneurial education in Croatia*

Primary data is collected by researching contextual and individual indicators of entrepreneurial activity and their interaction; within the GEM model they are integrated into 4 groups: conditions of the entrepreneurial environment, social perception and values, individual attributes of potential entrepreneurs, and entrepreneurial activity.

Using the GEM model to observe entrepreneurial activity at the micro and macro levels—through the interaction between individuals and the entrepreneurial environment, as well as between individual characteristics and social values—provides a multidimensional insight into the entrepreneurial structure and entrepreneurial potential (Singer et al., 2022, pp. 14–20). All observed factors point to the importance of developing entrepreneurial awareness and entrepreneurial spirit as prerequisites and indicators of entrepreneurial activity and, consequently, economic growth and development (GERA, 2018, pp. 21–30; Singer et al., 2022, pp. 14–17). Long-term GEM research has proven that an appropriate entrepreneurial culture and an entrepreneurial education system contribute to the recognition of opportunities in the environment and thus to greater entrepreneurial aspirations and expectations of entrepreneurial individuals (Levie & Autio, 2008).

From the onset of the research, the Croatian GEM team has pointed to the need for coordinated strengthening of entrepreneurial capacity at the individual and institutional level. It is emphasized that at the individual level, it is crucial to enable the development of entrepreneurial competencies and aspirations through the processes of formal and informal learning and encourage self-employment as a response to dissatisfaction with the situation in society. At the institutional level, it is necessary to enable a greater degree of cooperation and coordination of various stakeholders, especially research and educational institutions and companies as the only way to strengthen Croatia's innovation capacity. The GEM reports point out that, to effectively implement the proposed measures, it is necessary to simplify the regulatory framework and develop a stimulating entrepreneurial culture in Croatia through positive media and educational influence (Singer et al., 2018; Singer et al., 2019: Singer et al., 2022).

***Table 1 GEM grades of entrepreneurial education in Croatia***

| | 2020 | | 2021 | | 2022 | | 2023 | |
|---|---|---|---|---|---|---|---|---|
| **Level** | **Grade** | **Rank** | **Grade** | **Rank** | **Grade** | **Rank** | **Grade** | **Rank** |
| I* | 2.4 | 32/45 | 2.7 | 8/19 | 2.9 | 6/16 | 2.9 | 7/19 |
| II** | 3.5 | 42/45 | 3.4 | 18/19 | 3.8 | 14/16 | 4.0 | 17/19 |

Note: I* = School (primary and secondary) II** = Post-school (tertiary)
*Source: GERA (2024, p. 118); GERA (2023, p. 128); GERA (2022, p. 102); GERA (2021, p. 98)*

In the GEM reports (Table 1), Croatia's constant underachievement in entrepreneurial education at school (primary and secondary education levels) is observed, which reduces the potential for the development of the necessary entrepreneurial culture in Croatia (Singer et al., 2021, p. 83; Singer et al., 2022, p. 86). Nevertheless, looking at the period from 2020 to 2023, certain positive shifts in the evaluation of entrepreneurial education across all educational levels can be observed (GERA, 2024, p. 118).

## 3. Methodology

Quantitative research was conducted in two phases. The first phase, the preliminary research, referred to an oral survey of 30 respondents to check their understanding of the survey questions. In the second phase, a survey with a link to a Google form was distributed via email through the authors' network of contacts from educational institutions with a request for participation and further distribution. Thus, a convenient sample was formed using the snowball method.

The questionnaire, consisting of 39 questions, was developed based on the GEM model framework, focusing on entrepreneurial features and characteristics, entrepreneurial awareness and spirit, and the role of entrepreneurial education. For instance, within the GEM research project, society's perception of entrepreneurship and entrepreneurial culture were assessed by examining opinions on: 1) entrepreneurship as a good career choice, 2) social status of successful entrepreneurs, and 3) media attention focused on entrepreneurship (GERA, 2018, pp. 21–23). The following questions from the questionnaire for the adult population (Adult Population Survey, APS) were used: 1) knowledge of entrepreneurial active individuals, 2) recognition of opportunities for starting an entrepreneurial venture in the place of residence, and 3) opinion about having the necessary skills and knowledge to start an entrepreneurial venture (perceived entrepreneurial ability) (GERA, 2018, pp. 29-30).

Questions of different types (dichotomy, multiple choice and Likert scale) were used, grouped into five groups: 1) demographic characteristics of respondents, 2) perception of respondents about entrepreneurial culture, 3) key entrepreneurial traits, 4) participation of respondents in entrepreneurial education and evaluation of their own level of formal entrepreneurial education, and 5) entrepreneurial characteristics of respondents as a reflection of their entrepreneurial spirit.

The research was conducted from December 2023 to February 2024 on a sample of teachers from educational institutions in central and eastern parts of Croatia. A total of 540 respondents participated, i.e., 168 teachers from primary schools, 220 from secondary schools, and 152 teachers from higher education institutions.

The results were processed using the SPSS program. For questions that, as in the GEM questionnaire, were dichotomous, and those that allowed multiple responses, the answers are presented as frequencies, while for questions measured on a five-point Likert scale with grades from 1 to 5, the results are presented as mean values. Correlation, the coefficient of determination and the t-test were used to determine the connection between formal entrepreneurial education and entrepreneurial awareness and between formal entrepreneurial education and the entrepreneurial spirit of teachers (Tables 7 and 8).

In the first part of the following section, the results are analyzed by educational institution level to gain a more detailed insight into the specificities of each group of teachers.

In the second part, when testing the link between formal entrepreneurial education and the variables of entrepreneurial awareness and spirit, the data was pooled to increase the statistical power and reliability of the results. Considering the entire sample enables a more reliable assessment of the relationship between education and key dimensions of entrepreneurial activity.

Emphasis is placed on formal entrepreneurial education since it is recognized as a key prerequisite for involving teachers in the implementation of entrepreneurship-focused teaching modules. Formal education is thus seen as a key predictor of teachers' engagement and as a starting point for understanding their perceptions and readiness to participate in entrepreneurial education.

## 4. Research results

Table 2 shows the demographic characteristics of respondents grouped according to the type of institution where they are employed (primary, secondary, and higher education institutions).

*Table 2 Demographic characteristics of the respondents*

| N = 540 | Educational institutions | | |
|---|---|---|---|
| | Primary | Secondary | Higher |
| | N = 168 (31.11%) | N = 220 (40.74%) | N = 152 (28.15%) |
| Gender (in %) | | | |
| Male | 35.72 | 43.63 | 52.63 |
| Female | 64.28 | 56.37 | 47.37 |
| Age (in %) | | | |
| 18–24 | 9.52 | 0.00 | 0.00 |
| 25–34 | 42.81 | 20.90 | 17.11 |
| 35–44 | 27.38 | 20.00 | 42.11 |
| 45–54 | 13.09 | 31.82 | 22.37 |
| 55–64 | 7.20 | 24.55 | 10.53 |
| 65–74 | 0.00 | 2.73 | 7.88 |
| Educational level of the respondents (in %) | | | |
| High school | 1.19 | 2.73 | 0.00 |
| Undergraduate study | 0.00 | 3.64 | 0.00 |
| Graduate study | 94.05 | 87.27 | 46.05 |
| Master of Science | 4.76 | 6.36 | 10.52 |
| Doctor of Science | 0.00 | 0.00 | 43.43 |

*Source: Authors*

Table 3 shows the respondents' perception of entrepreneurial culture in Croatia, as well as their views on its role in overall social progress and the role of entrepreneurial education in its development.

*Table 3 Entrepreneurial awareness*

| | Educational institutions | | |
|---|---|---|---|
| | Primary | Second. | Higher |
| | N = 168 | N = 220 | N = 152 |
| 3.1 Necessary factors for the development of entrepreneurial culture: (in %) | | | |
| a) Media | 5.95 | 1.81 | 2.63 |
| b) Education | 60.72 | 63.63 | 47.37 |
| c) Upbringing | 23.81 | 22.75 | 36.84 |
| d) Social recognition | 8.33 | 5.45 | 7.89 |
| e) All of the above | 1.19 | 6.36 | 5.27 |
| 3.2 "Entrepreneurship is an attractive career." (Yes, in %) | 15.47 | 22.73 | 38.16 |
| 3.3 "Entrepreneurs have status and respect in society." (Yes, in %) | 14.28 | 18.18 | 17.10 |
| 3.4 "Successful entrepreneurial stories are featured in the media." (Yes, in %) | 14.28 | 19.09 | 28.95 |
| 3.5 "It is easy to start a new business in Croatia." (Yes, in %) | 10.72 | 13.64 | 14.47 |
| 3.6 "Entrepreneurial culture is a prerequisite for social progress." | | | |
| Mean (1–5 scale) | 4.07 | 4.23 | 4.41 |
| 3.7 "Entrepreneurial education is a key prerequisite for the development of entrepreneurial culture." | | | |
| Mean (1–5 scale) | 4.05 | 3.97 | 4.08 |

*Source: Authors*

Participants singled out education and upbringing as the most important factors for the development of entrepreneurial culture (3.1, Table 3). Respondents from higher education institutions give almost

equal importance to education (47.37%) and upbringing (36.84%), while respondents from elementary (60.71% vs. 23.81%) and secondary schools (63.63% vs. 22.75%) emphasize education more than upbringing.

The respondents' perceptions of the determinants of entrepreneurial culture in Croatia are shown in their responses to statements 3.2 to 3.5 (Table 3). This indicates that most respondents view Croatia's entrepreneurial culture as poorly developed, while teachers in higher education institutions have a somewhat more positive perception. However, although teachers in higher education institutions are more likely than others to consider entrepreneurship a good career choice (38.16%), only 14.47% agree that it is easy to start a new business in Croatia.

For statements 3.6 and 3.7 (Table 3), the respondents indicate their degree of agreement using a 1–5 Likert scale. Mean values (around 4 and above) indicate that the respondents largely agree with the statements. Again, the highest scores were given by respondents from higher education institutions.

Table 4 presents the results for the key entrepreneurial traits (4.1), the perceived role of entrepreneurship education for the development of entrepreneurial traits (4.2), and the respondents' engagement in development of entrepreneurial traits of their students (4.3).

***Table 4 Perception of entrepreneurial traits***

| | Educational institutions | | |
|---|---|---|---|
| | Primary | Secondary | Higher |
| | N = 168 | N = 220 | N = 152 |
| 4.1 Key entrepreneurial traits: (in %) | | | |
| a) Imagination | 17.85 | 5.45 | 6.59 |
| b) Creativity | 21.43 | 11.82 | 18.42 |
| c) Need for achievement | 10.72 | 17.27 | 11.84 |
| d) Boldness | 16.67 | 19.10 | 25.00 |
| e) Self-confidence | 26.19 | 26.36 | 10.53 |
| f) Acceptance of uncertainty | 7.14 | 18.18 | 19.73 |
| g) Feeling of control over events (internal locus of control) | 0.00 | 1.82 | 7.89 |
| 4.2 "Entrepreneurial education is crucial for developing entrepreneurial traits." | | | |
| Mean (1–5 scale) | 4.18 | 3.97 | 4.09 |
| 4.3 "Through my work, I encourage the development of entrepreneurial traits in the educational group where I teach." | | | |
| Mean (1–5 scale) | 3.62 | 3.98 | 4.00 |

*Source: Authors*

The surveyed teachers evaluated the key entrepreneurial traits differently. For primary school teachers, the key qualities are self-confidence (26.19%) and creativity (21.43%), while for secondary school teachers, these are self-confidence (26.36%) and boldness (19.10%), whereas for higher education teachers, these qualities are boldness (25.00%) and acceptance of uncertainty (19.73%).

Respondents from all educational institutions largely agree that education plays a key role in the development of an individual's entrepreneurial qualities (4.2, Table 4). Ratings for personal encouragement of the development of entrepreneurial qualities in students increase with the level of the respondents' educational institution (4.3, Table 4).

Table 5 summarizes the results related to aspirations and involvement in entrepreneurial education, as well as respondents' assessment of their own level of formal entrepreneurial education. Special emphasis is placed on formal entrepreneurial education as a prerequisite for teachers' involvement in entrepreneurship-oriented teaching modules (5.6, Table 5).

***Table 5 Involvement in entrepreneurial education***

| | Educational institutions | | |
|---|---|---|---|
| | **Primary** | **Second.** | **Higher** |
| | **N = 168** | **N = 220** | **N = 152** |
| 5.1 Involvement in entrepreneurial education (in %) | 7.14 | 16.36 | 38.16 |
| 5.2 Desire to be involved in entrepreneurial education (in %) | 80.95 | 71.82 | 78.95 |
| 5.3 Desired role in entrepreneurial education: (in %) *(only respondents who expressed a desire to be involved)* | | | |
| a) Participant | 73.54 | 59.50 | 26.66 |
| b) Educator | 5.88 | 24.05 | 25.00 |
| c) Participant and educator | 20.58 | 16.45 | 48.34 |
| 5.4 Implementation of entrepreneurial education in the institution (in %) | 7.14 | 14.54 | 52.63 |
| 5.5 Persons conducting entrepreneurial education: (in %) *(only respondents from institutions where training is conducted)* | | | |
| a) Teachers | 83.33 | 87.50 | 97.50 |
| b) Non-teaching staff | 16.67 | 12.50 | 2.50 |
| 5.6 Estimated level of respondents' own formal entrepreneurial education | | | |
| Mean (1–5 scale) | 1.42 | 2.63 | 3.81 |
| 5.7 "My institution cooperates with entrepreneurs." | | | |
| Mean (frequency: 1 = never; 5 = all the time) | 2.24 | 2.87 | 3.38 |
| 5.8 "Technical education helps initiate entrepreneurial activity." | | | |
| Mean (1–5 scale) | 3.53 | 3.62 | 3.82 |
| 5.9 "Technical education helps implement entrepreneurial activities." | | | |
| Mean (1–5 scale) | 3.72 | 3.77 | 4.17 |

*Source: Authors*

The responses to question 5.1 (Table 5) indicate a very low level of involvement of respondents in the implementation of entrepreneurial education (only 7.14% from primary, 16.36% from secondary, and 38.16% from higher education). On the other hand, the high proportion of respondents across all institutions who expressed a desire to be involved in entrepreneurship education is encouraging (5.2, Table 5). Furthermore, a small proportion of primary (7.14%) and secondary schools (14.54%) implemented educational programs for entrepreneurship (5.4, Table 5), compared to slightly more than half of higher education institutions (52.63%). As for the assessment of the level of personal formal entrepreneurial education (5.6, Table 5), the lowest mean score was recorded among primary school teachers (1.4), followed by secondary school teachers (2.6), while the highest was observed among higher education teachers (3.8).

Table 6 presents the responses regarding the determinants of entrepreneurial traits and entrepreneurial spirit through the GEM prism (6.1–6.6, Table 6), as well as the results related to the role of entrepreneurial education in entrepreneurial activity (6.7–6.10, Table 6).

***Table 6 Entrepreneurial spirit***

| | Educational institutions | | |
|---|---|---|---|
| | Primary | Second. | Higher |
| | N = 168 | N = 220 | N = 152 |
| 6.1 Do you personally know anyone who has started a business in the last 2 years? (Yes, in %) | 67.86 | 79.09 | 89.47 |
| 6.2 Will there be good opportunities to start a business in the area where you live in the next 6 months? (Yes, in %) | 19.05 | 23.63 | 40.79 |
| 6.3 Do you have the knowledge, skills, and experience needed to start your own business? (Yes, in %) | 26.19 | 47.27 | 35.52 |
| 6.4 Would the fear of failure prevent you from starting your own business? (Yes, in %) | 54.76 | 30.91 | 50.00 |
| 6.5 Are you planning, alone or with others, to start a new business in the next 3 years? (Yes, in %) | 22.62 | 32.72 | 14.47 |
| 6.6 Have you done anything in the last 12 months to start a new business? (Yes, in %) | 14.28 | 24.55 | 22.37 |
| 6.7 "Entrepreneurial education helps identify opportunities." | | | |
| Mean (1–5 scale) | 4.21 | 4.54 | 4.72 |
| 6.8 "Entrepreneurial education reduces the fear of failure." | | | |
| Mean (1–5 scale) | 3.51 | 3.22 | 3.63 |
| 6.9 "Entrepreneurial education increases the perceived ability to act as an entrepreneur." | | | |
| Mean (1–5 scale) | 3.24 | 2.91 | 4.23 |
| 6.10 "Entrepreneurial education affects the success of entrepreneurial ventures." | | | |
| Mean (1–5 scale) | 3.53 | 4.42 | 4.31 |

*Source: Authors*

The results related to the questions 6.1 and 6.2 (Table 6) indicate that teachers in higher education institutions tend to perceive entrepreneurial opportunities in their environment to a greater extent. However, it is interesting that secondary school teachers expressed the strongest intention to engage in entrepreneurial activities (6.3–6.6, Table 6). Finally, the responses related to the role of entrepreneurial education in entrepreneurial activity (6.7–6.10, Table 6) indicate the highest level of agreement among higher education teachers.

To examine the relationship between teachers' formal entrepreneurial education and their entrepreneurial awareness, as well as between formal entrepreneurial education and entrepreneurial spirit, the correlation coefficient (r), the coefficient of determination ($r^2$) and the t-test were calculated (Tables 7 and 8).

***Table 7 Correlation between teachers' entrepreneurial education and entrepreneurial awareness***

| | correlation (r) | ( $r^2$ ) | t | t > 2.576 p < 0.01 |
|---|---|---|---|---|
| (3.6) "Entrepreneurial culture is a prerequisite for social progress." | 0.999 | 0.998 | 298.03 | strong |
| (5.7) "My institution cooperates with entrepreneurs." | 0.998 | 0.996 | 210.53 | strong |
| (5.8) "Technical education helps initiate entrepreneurial activity." | 0.977 | 0.955 | 61.45 | strong |
| (4.3) "Through my work, I encourage the development of entrepreneurial traits in the educational group where I teach." | 0.970 | 0.941 | 53.28 | strong |
| (5.9) "Technical education helps implement entrepreneurial activities." | 0.912 | 0.832 | 29.69 | strong |
| (4.2) "Entrepreneurial education is crucial for developing entrepreneurial traits." | 0.327 | 0.107 | 4.62 | weak |
| (3.7) "Entrepreneurial education is a key prerequisite for the development of entrepreneurial culture." | 0.264 | 0.070 | 3.65 | weak |

*Source: Authors*

For five of the seven statements (Table 7), a strong positive correlation was observed between teachers' formal entrepreneurial education and their entrepreneurial awareness (statements 3.6, 5.7, 5.8, 4.3, and 5.9), while a weak positive correlation was found for the remaining two statements (4.2 and 3.7).

***Table 8 Correlation between teachers' entrepreneurial education and entrepreneurial spirit***

| | **correlation (r)** | **( $r^2$ )** | **t** | **t > 2.576 p < 0.01** |
|---|---|---|---|---|
| **(6.7) "Entrepreneurial education helps identify opportunities."** | 0.993 | 0.986 | 111.97 | strong |
| (6.10) "Entrepreneurial education affects the success of entrepreneurial ventures." | 0.811 | 0.658 | 18.50 | strong |
| (6.9) "Entrepreneurial education increases the perceived ability to act as an entrepreneur." | 0.735 | 0.540 | 14.46 | moderate |
| (6.8) "Entrepreneurial education reduces the fear of failure." | 0.240 | 0.058 | 3.30 | weak |

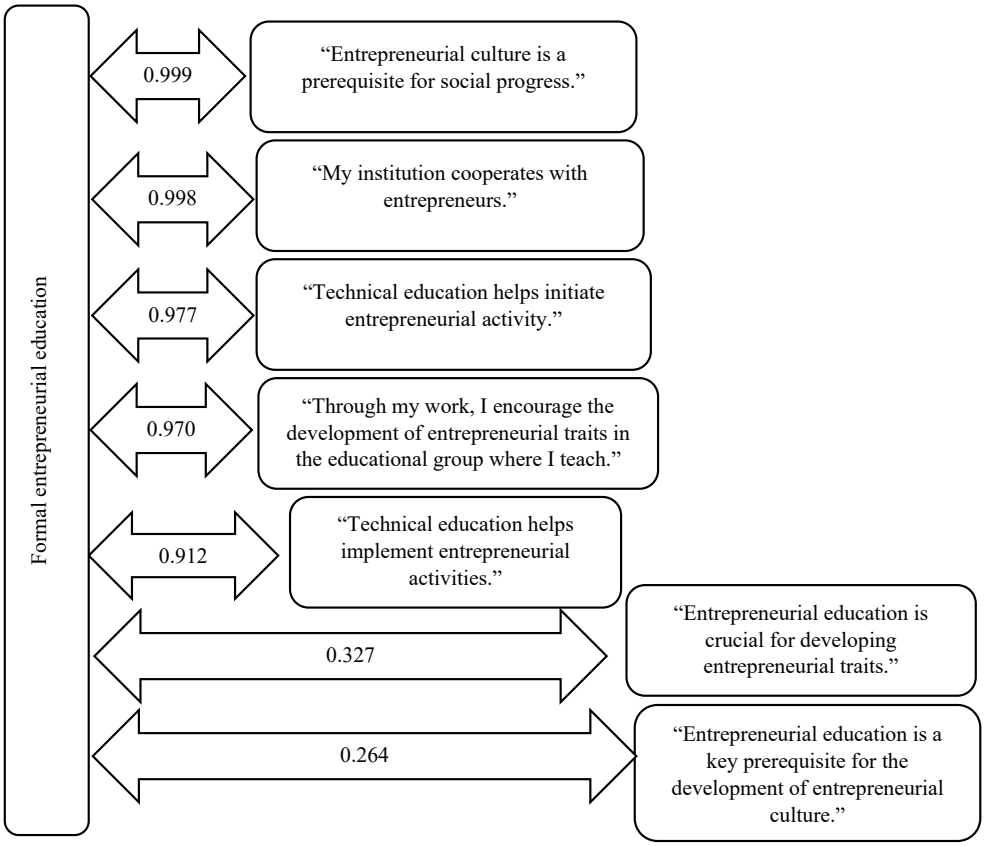
*Source: Authors*

For two of the four statements (Table 8), a strong positive correlation was observed between teachers' formal entrepreneurial education and entrepreneurial spirit (statements 6.7 and 6.10), while the remaining two statements showed a moderate positive correlation (6.9) and a weak positive correlation (6.8), respectively.

The results presented indicate varying degrees of correlation between teachers' formal entrepreneurial education and individual statements reflecting their entrepreneurial awareness and spirit. Strong correlations ($r > 0.8$) confirm a strong connection between formal entrepreneurial education and variables reflecting entrepreneurial awareness and spirit, which indicates that education has a real and measurable impact on teachers' perceptions and actions. Moderate correlations ($0.5 < r < 0.8$) show a partial but significant impact, while weak correlations ($r < 0.3$) suggest that other factors outside the educational process also influence certain teachers' attitudes. All established connections proved to be statistically significant ($p < 0.01$), which further confirms the reliability of the findings.

Graph 2 presents a conceptual model of the relationship between teachers' formal entrepreneurial education and their entrepreneurial awareness, while Graph 3 illustrates the relationship between formal entrepreneurial education and the entrepreneurial spirit of teachers in Croatia.

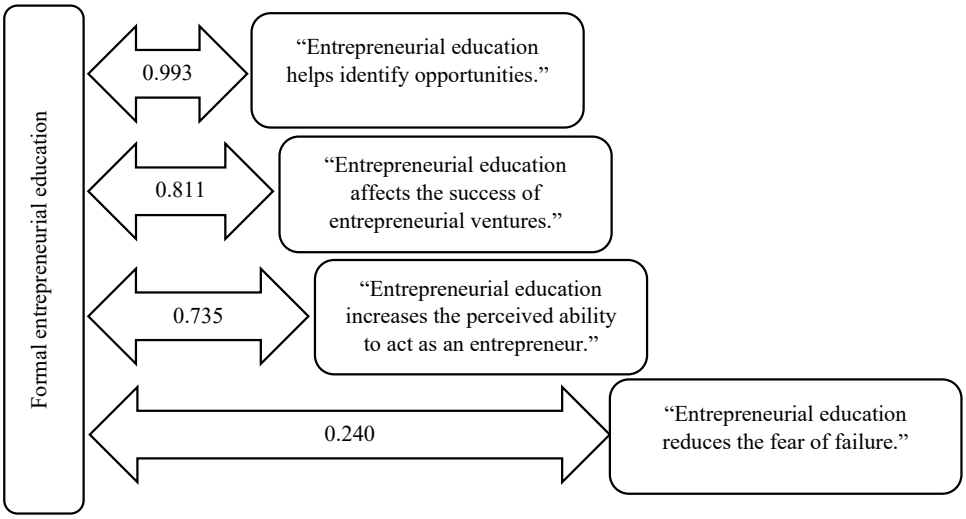
***Graph 2 Correlation between entrepreneurial education and entrepreneurial awareness of teachers in Croatia***




*Source: Authors*

Graphs 2 and 3 summarize all findings since the analysis was focused on examining the relationship between the estimated level of one's own formal entrepreneurial education (statement 5.6, Table 5) and other statements related to teachers' entrepreneurial awareness and spirit. This allows for a clearer and more comprehensive insight into the relationships between variables and a clearer observation of patterns of connection. Separate presentations were conducted for each group of educational institutions (primary, secondary, and higher education) in the descriptive analysis, while in this step the aim was to synthesize the data to highlight the general connection between formal education and the key constructs of the GEM framework.

***Graph 3 Correlation between entrepreneurial education and the entrepreneurial spirit of teachers in Croatia***




*Source: Authors*

All relationships shown in the graphs are based on correlations and were tested using standard statistical procedures. The correlations obtained were found to be statistically significant at the $p < 0.01$ level, which means that the results are reliable and can be considered a relevant indicator of the relationship between formal entrepreneurial education and other variables. High values of the correlation coefficients ($r > 0.8$ in most statements) indicate a strong connection, while weaker correlations ($r < 0.3$) are also significant, but indicate that these attitudes are also influenced by other factors outside of formal entrepreneurial education.

### *4.1 Discussion of the results*

The results of the conducted research indicate a strong positive connection between formal entrepreneurial education and the following determinants of teachers' entrepreneurial awareness: entrepreneurial culture as a prerequisite for social progress, cooperation between educational institutions and entrepreneurs, technical education that helps initiate entrepreneurial activity, engagement of teachers who encourage the development of entrepreneurship among students, and technical education that helps implement entrepreneurial activities (Graph 2). At the same time, a weak positive connection was observed between formal entrepreneurial education and the assertion that entrepreneurial education is crucial for developing entrepreneurial traits, and that entrepreneurial education is a key prerequisite for the development of entrepreneurial culture (Graph 2).

Graph 3 indicates a strong positive connection between formal entrepreneurial education and the attitude that entrepreneurial education helps recognize opportunities, and that it also affects the success of an entrepreneurial venture. A medium-strong positive correlation was established between formal entrepreneurial education and the claim that entrepreneurial education increases the perceived ability to act as an entrepreneur, while a weak positive correlation was established between formal entrepreneurial education and the claim that entrepreneurial education reduces the fear of failure. The latter is understandable, given that a higher level of entrepreneurial knowledge also increases awareness of environmental threats and thus fosters greater caution in entrepreneurial activity.

Although it could be assumed from the GEM research results that entrepreneurial education is positively related to the determinants of entrepreneurial awareness and entrepreneurial spirit, the results of the research conducted among teachers in Croatia largely confirmed this, although not entirely. Namely, a weak connection between teachers' formal entrepreneurial education and the attitude that entrepreneurial education is a key prerequisite

for the development of entrepreneurial culture is surprising, since GEM research has proven that an appropriate entrepreneurial culture and an entrepreneurially oriented education system contribute to the recognition of opportunities in the environment and greater entrepreneurial aspirations and expectations among entrepreneurially oriented individuals.

"Teachers, regardless of prior formal entrepreneurial education, do not perceive entrepreneurial education as a key prerequisite for developing an entrepreneurial culture." This finding can also reflect a weak entrepreneurial culture within the entire Croatian society, which does not pay adequate attention to entrepreneurial education.

Based on the research results presented, the answers to the research questions are as follows:

RQ1: What is the entrepreneurial awareness of teachers in Croatia?

According to the GEM research, society's perception of entrepreneurship, i.e., entrepreneurial culture, is assessed by examining opinions on 1) entrepreneurship as a good career choice, 2) social status of successful entrepreneurs, and 3) media attention focused on entrepreneurship (GERA, 2018, pp. 21–23).

A minority of respondents believe that entrepreneurship is an attractive career choice (3.2, Table 3), a view shared by 38.16% of higher education teachers and only 15.47% of primary school teachers. A similar ratio of responses is also observed for the statement that successful entrepreneurial stories are represented in the media (3.4, Table 3). Regarding the social status of entrepreneurs (3.3, Table 3), less than 15% of primary school teachers and less than 19% of secondary school and higher education teachers agree that entrepreneurs have a good reputation in society. This points to teachers' perception of a weak entrepreneurial culture in Croatia. Furthermore, respondents from all educational institutions largely agree (a score around 4 on a 1–5 scale) that entrepreneurial culture is a prerequisite for social progress (3.6, Table 3), as well as that entrepreneurial education is a key prerequisite for the development of entrepreneurial culture (3.7, Table 3), which indicates the existence of entrepreneurial awareness among teachers (and it increases with the level of the educational institution they come from).

RQ2: What is the entrepreneurial spirit of teachers in Croatia?

The assessment of entrepreneurial spirit also provides an insight into the potential for entrepreneurial activity. This examines: 1) knowledge of entrepreneurially active individuals, 2) recognition of opportunities for starting an entrepreneurial venture in the place of residence, and 3) opinion about having the necessary skills and knowledge to start an entrepreneurial venture (perceived entrepreneurial ability). Determinants of entrepreneurial spirit are also determinants of entrepreneurial potential, whereby the fear of failure that can prevent individuals from starting business ventures is also assessed (GERA, 2018, pp. 29–30).

Among the respondents, entrepreneurial characteristics and entrepreneurial spirit can be observed, with both being more pronounced among teachers in secondary schools and higher education institutions (6.1–6.3, Table 6). The highest entrepreneurial potential was observed among secondary school teachers, who showed the highest degree of confidence in their own knowledge needed to start an entrepreneurial venture, the least fear of failure, as well as the highest level of readiness to start their own entrepreneurial venture (6.3–6.6, Table 6).

RQ3: Is there a significant relationship between the level of formal entrepreneurial education of teachers and their entrepreneurial awareness?

Graph 2 provides a systematic overview of the relationship between the estimated level of teachers' own formal entrepreneurial education and other entrepreneurial awareness variables. All correlations shown are statistically significant ($p < 0.01$), with strong correlations indicating a strong influence of education, while weaker correlations indicate that additional factors are also at play. The strongest correlations were observed for statements related to entrepreneurial culture as a prerequisite for social progress, cooperation with entrepreneurs, and the role of technical education in initiating and implementing entrepreneurial activity. Such results confirm the GEM research findings, which highlight the importance of entrepreneurial education for strengthening awareness at the individual and institutional levels (Singer et al., 2022; GERA, 2023). On the other hand, weaker correlations for statements such as "entrepreneurial education is a key prerequisite for the development of an entrepreneurial culture" indicate that entrepreneurial

awareness also arises from a broader social and cultural context, and not only from formal education.

RQ4: Is there a significant relationship between formal entrepreneurial education of teachers and their entrepreneurial spirit?

Graph 3 systematically presents the correlations between the estimated level of teachers' own formal entrepreneurial education and other entrepreneurial spirit variables. All correlations shown are statistically significant ($p < 0.01$), with strong correlations confirming the pronounced influence of formal entrepreneurial education, and weaker ones confirming the presence of influence of other factors. The strongest links were observed in the recognition of entrepreneurial opportunities and the assessment that formal entrepreneurial education influences the success of entrepreneurial ventures, which is in line with previous findings that entrepreneurial knowledge reduces uncertainty and encourages proactive behavior (Levie & Autio, 2008; Lackéus, 2015). A moderate connection was found in the assessment of teachers' own ability to act as an entrepreneur, while the weakest correlation was observed in the statement that education reduces the fear of failure, which indicates that individual characteristics and the environment also play an important role. Overall, the results show that formal entrepreneurial education systematically contributes to the development of the entrepreneurial spirit, but that this influence is conditioned by personal attitudes and broader social circumstances.

### *4.2 Practical implications*

The research results have important practical implications for the education system and the design of educational policies in Croatia.

First, a strong connection between formal entrepreneurial education and the development of entrepreneurial awareness and spirit among teachers was observed, which indicates the need for systematic integration of entrepreneurial education into all levels of education. By introducing mandatory entrepreneurial education modules into curricula, it is possible to encourage not only the development of entrepreneurial competencies among teachers, but also to increase their engagement in transferring this knowledge and skills to students.

Second, the finding that teachers express a strong desire to engage in entrepreneurship education, although they simultaneously assess their level of formal education as low, indicates a gap between desired and actual competencies. This gap suggests a need for professional development programs for teachers to ensure their adequate preparation for implementing entrepreneurial content in practice.

Third, the results indicate that teachers from different levels of educational institutions have different priorities and perceptions of entrepreneurial competences. Therefore, it is necessary to develop differentiated approaches: in primary and secondary schools, greater emphasis should be placed on developing students' creativity, self-confidence. and courage, while in higher education, stronger connections between teachers and the business sector with more real cases in the courses are necessary.

Finally, the research confirms that formal entrepreneurial education acts as a key predictor of teachers' entrepreneurial awareness and spirit. This finding has broader implications for educational policy: investing in systematic teacher education in entrepreneurship can, in the long term, lead to a stronger entrepreneurial culture in society, increased innovation, and greater development potential of the national economy.

## *5. Conclusion*

Entrepreneurship is more dynamic in a society that has a built-in entrepreneurial culture, in which entrepreneurial education is represented at all levels of education, and in which emphasis is placed on the development of entrepreneurial traits and characteristics. The aim of the paper was to investigate the entrepreneurial awareness and spirit of teachers in Croatia, as the bearer of entrepreneurial activity and implementer of entrepreneurial education, as well as the connection between teachers' formal entrepreneurial education and their entrepreneurial awareness and spirit.

Entrepreneurial culture reflects society's awareness of entrepreneurship and influences the entrepreneurial spirit of that community. Developing societal awareness of the importance of entrepreneurship and fostering an entrepreneurial spirit are key to launching new ventures in turbulent and challenging circumstances. Entrepreneurial education has a positive effect on the formation of an entrepreneurial spirit and positive attitudes about entrepreneurship in society (entrepreneurial awareness), i.e., it makes it easier for individuals recognizing and exploiting opportunities in the environment,

as well as starting and managing entrepreneurial ventures.

The respondents' answers confirmed the negative image and perception of entrepreneurship in Croatian society. Respondents from all educational institutions perceive entrepreneurial opportunities in the environment, but teachers from middle-level educational institutions expressed the greatest intention for entrepreneurial activity, less fear of failure, as well as a greater perception of self-efficacy (possessing the necessary knowledge, skills and experience to start an entrepreneurial venture). Secondary school teachers showed the highest level of entrepreneurial spirit; therefore, it is recommended that their perceived entrepreneurial potential be channeled into the implementation of entrepreneurial educational programs.

The results indicated a desire among teachers at all educational levels to be involved in entrepreneurial education, both as educators and as learners. The observed potential should be used through appropriate government programs and policies to introduce entrepreneurial education programs at all levels of education, which includes learning about entrepreneurship but also fosters entrepreneurial awareness and spirit by both learning for entrepreneurship and learning through entrepreneurship.

Practical implications of the research point to several important directions. First, the importance of including entrepreneurship education modules at all educational levels is highlighted by a strong positive correlation between formal entrepreneurship education and entrepreneurial awareness and spirit. Second, the necessity of targeted training programs and continuous professional development highlights the discrepancy between the relatively low assessment of teachers' own formal education and their desire to engage in entrepreneurship education. Third, differentiated approaches are needed: in primary and secondary school education, the emphasis should be on creativity, self-confidence, and courage, while in higher education, it is important to establish stronger links with the business sector and examples from business practice. These results offer policymakers a clear direction: expanding formal entrepreneurship education for teachers is a long-term investment that can positively impact the national economy and the entrepreneurial ethos of society.

Limitations arise from the type and size of the sample used. The results should be considered indicative, not representative, since the research was conducted on a convenient sample of teachers from central and eastern Croatia.

Future research should be conducted on a representative sample of teachers from all regions of Croatia, and through continuous monitoring of teachers' entrepreneurial awareness and spirit. In addition, it would be useful to conduct comparative studies of the entrepreneurial orientation of teachers in Croatia and other EU member states, with a particular emphasis on the ways in which systematic professional development in entrepreneurship can promote the entrepreneurial culture of both students and teachers.

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