



## **The role of Higher Engineering Education Institutions in supporting, applying and developing the Ecosystem of Entrepreneurship and establishing strong links between it and Micro, Small and Medium Enterprises (MSMEs)**

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### **Abstract**

This study aims to review the researches and studies that establish the rules of the ecosystem for entrepreneurship and its six basic components, and analyze the various participations and contributions from all civil society institutions in terms of supporting, applying and developing .These basic components or practices emanating from it and identifying components relevant to the engineering field to shed light on how engineering education institutions address, support, apply, develop, and teach these components to their students and the surrounding community. The study also aims to identify the links between the entrepreneurship ecosystem and Micro, Small and Medium-sized Enterprises , identify the negatives and positives of these links, and how to maximize the benefit from the entrepreneurship ecosystem to create such companies. Which benefits not only the individuals and institutions that created them, but also the country's gross domestic product (GDP) .

### **Introduction**

Whereas, institutions of higher engineering education work to build and shape the student's personality, the strength of his talents, and the development of his skills so that he becomes an engineer who masters the engineering sciences and applied arts that enable him to develop and modernize society .In various fields of engineering sciences. It was important to identify areas of work in engineering sciences and applied arts related to the field of entrepreneurship in order to develop and develop these institutions to suit the work required of them in the field of entrepreneurship.

Areas of work in engineering sciences in entrepreneurship

The fields of work of engineering sciences in the field of entrepreneurship can be divided into two main parts:

First: The field of work in the processes and mechanisms of entrepreneurship

Second: In the field of innovations and inventions of an engineering nature as one of the products and outputs.

### **Literature review**

#### ***What are the characteristics of entrepreneurship?***

Entrepreneurship is the process of establishing, developing, and managing startups and small projects, and this process is characterized by a number of distinctive characteristics that distinguish it from other types of commercial activities. Here are some notable characteristics of entrepreneurship:

Innovation - Willingness to take risks - the ability to learn –Resilience – Vision- Goal –Teamwork  
.Passion –Commitment- Adaptation- Social influence – Driving –Negotiation- Added value  
Flexibility – Patience - Strategic thinking - Openness to improvement -Active listening  
Technological innovation- Motivation - Future thinking- Responding to change. Positive thinking -  
The ability to make decisions - Attention to detail - The ability to build good relationship-  
Efficiency in time management - Financial sustainability - Commitment to social responsibility.

The knowledge-bridging role of ERCs in linking academic research to entrepreneurial practice is widely acknowledged, e.g., by Sandberg and Gatewood (1991) that indicate ERCs as privileged infrastructures to promote and support the mutual development of entrepreneurship research and practice, and by Katz (1991) that recognizes ERCs as those entities which provide “the model for helping faculty to work with business in a manner practical to business and academic goals” (p. 91).

When mentioning entrepreneurship, thinking and consideration may turn to innovation, creativity, and invention, and turning them all into a marketable product that generates a tangible financial return that brings profit to the entrepreneur, startup company, or pioneering institution. Although this statement is true to a large extent, there is also a type of entrepreneurship called social entrepreneurship.

### ***What is social entrepreneurship?***

Social Entrepreneurship is a type of entrepreneurship that aims to achieve a positive social impact on society, in addition to achieving financial success. Social entrepreneurs focus on solving social and environmental problems by developing sustainable business models that contribute to improving people's lives and improving social and environmental conditions.

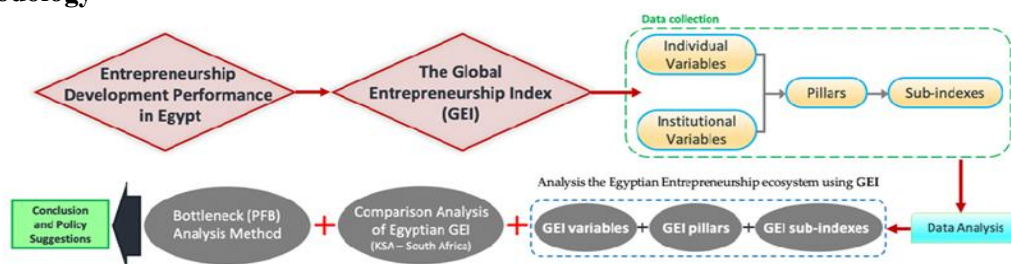
Social entrepreneurship is characterized by several features, including:

- .6 Social goal: Social entrepreneurship seeks to improve a specific social problem or provide better opportunities for disadvantaged groups of society.
- .7 Sustainability: Social enterprises seek to develop sustainable and profitable business models to achieve social goals in the long term.
- .8 Interaction with the community: Social entrepreneurship collaborates with the local community and relevant partners to ensure maximum positive impact.
- .9 Added value: Social entrepreneurship is concerned with providing products or services that provide real value to social beneficiaries.
- .10 Social Adaptation: Social entrepreneurship seeks to adapt to changing social challenges and provide effective solutions.

Examples of social entrepreneurship include establishing charities and non-governmental organizations (NGOs) that aim to improve the situation of disadvantaged people, and developing innovative products or services to help vulnerable groups, such as providing food to the needy, providing education to children in remote areas, and providing job opportunities to poor communities.

Social entrepreneurship requires vision, inspiration, ability to communicate, and teamwork to achieve the desired positive impact. Social entrepreneurs are encouraged to balance social and financial goals to ensure project continuity and maximum benefit to society and the environment.

### **Methodology**



Designing an Egyptian ecosystem for entrepreneurship may be one of the most important, powerful and effective pillars of the growth of the Egyptian economy if it is designed on the basis of solving all problems in all areas that obstruct economic growth. It must be one of the components of the environmental system, a pillar of self-reliance and the state's own resources and an attempt to exploit it Human capital.

Criteria for designing the entrepreneurship ecosystem

Local character traits of the ecosystem

Economic problems that hinder growth in a country with an entrepreneurship ecosystem

Lists of necessary and proposed solutions and products to solve economic problems

A list of customs, traditions and cultures that interfere with the environmental system

## Results and Discussion

### Conclusion

Hence, we find that theoretical higher education institutions must develop their educational programs to include educational programs. It shapes the personality of the graduate and develops his skills and specialized academic qualities to be compatible with the culture and thought of entrepreneurship So that he works directly in the field, develops, innovates and creates in various fields and makes effective contributions. In establishing entrepreneurial entities and projects, or being a helpful factor in preparing and equipping the establishment of these entities



**Figure 1.** Entrepreneurship ecosystem domains and sub-elements.

Source: adapted from [5,8,10].

By preparing cadres and suitable environments to create these entities, and never in any way hindering the establishment and growth of these entities.

The role of scientific and practical higher education institutions, especially engineering, in developing and supporting the field of entrepreneurship Creating, establishing and developing scientific environments suitable for conducting various experiments, such as laboratories and virtual laboratories, Simulation laboratories, applied research, and transfer of successful technologies that are compatible with the local environment

All of this is at the core of the work of practical scientific and engineering higher education institutions, represented in the fields of engineering and science, Medicine, pharmacy, etc

Developing curricula to include educational programs that serve the field of entrepreneurship is at the core of the work of scientific and engineering higher education institutions.

Designing educational programs and training courses for secondary, preparatory, and primary school students to qualify them, stimulate their talents and ambitions, and necessitate a sound orientation towards entrepreneurship must be at the core of the work of higher education institutions.

Liberating the Egyptian and African mind from the dominance of global policies and packaged products of ideas in the field of entrepreneurship is the true beginning of Egyptian and African entrepreneurship. Therefore, independent ecosystems for entrepreneurship must be created and what is applicable and that bears the fruits of success must be considered.

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