

INNOVATIVE ENTREPRENEURSHIP NEEDS ASSESSMENT IN THE REPUBLIC OF ARMENIA: EXPERT SURVEY

Ashot Kh. Markosyan

Yerevan State University

1 Alek Manukyan St., Yerevan 0025, RA

Shushi University of Technology

7 V.Vagharshyan, Stepanakert, RA

ashotmarkos@rambler.ru

ORCID iD: 0000-0002-5077-4253

Republic of Armenia

Hakob V. Tarposhyan

Public Administration Academy of the RA

8/1 Kievyan St., Yerevan 0028, RA

tarposhyanhakob@gmail.com

ORCID iD: 0000-0001-8277-0751

Republic of Armenia

Abstract

Innovation is the driving force of economic progress, which is often developed and mainly implemented by a separate group of enterprises.

This paper aims to identify the existing problems of innovative entrepreneurship in Armenia and to discuss possibilities for their solution. For this purpose, an expert - needed assessment survey was conducted among 103 experts from four fields: government policy and program (1); entrepreneurial activity (2); education, science & research (3); commercial infrastructure & business support services (4).

As a part of this research, we examined the government support to innovative entrepreneurship, importance of education for innovative entrepreneurship and R&D transfer.

Key words: Innovative entrepreneurship, Entrepreneurial education, Government policy, Expert survey, R&D.

Introduction

Over the past two decades, interest towards innovative entrepreneurship has grown due to its positive impacts on economic growth as well as the solution of social and environmental problems not only at the national level [1], but also in the community [2]. Armenia ranks 27th among 50 countries in terms of innovative products and 36th in terms of innovative processes. This is incomparably lower than the self-assessment of innovation [3].

In order to better understand Armenia's current status with regard to innovative entrepreneurship and to identify the existing problems and the possibilities for their optimal solution, a comprehensive expert survey was conducted.

We benefited from the expertise of the expert in identifying the most critical problems in the field and identifying the most efficient solutions.

Conflict setting

We have chosen “nominal group” methodology for our expert survey for which experts from different fields were involved until no new ideas are generated by the experts [4]. For the expert survey, first, the main groups were selected, which are more relevant and important for innovation entrepreneurship. These fields are:

- Government policy and program,
- Entrepreneurial activity,
- Education, science & research,
- Commercial infrastructure & business support services.

The expert survey was conducted through three successive stages:

Stage I – Deep interviews with a few representatives of the four main groups. This phase was intended to identify other possible key ideas related to the topics in Armenia. Such interviews were held separately and lasted 1.5-2 hours each. Clarifying the collected data, three areas of the expert survey were identified: state support and policy, human capital and education and R&D transfer. The results of this stage survey were incorporated into a preliminary questionnaire. The survey also included open-ended questions to identify ways to address the institutional problems of innovative entrepreneurship.

Stage II - A pilot survey with a total of 30 representatives from four main fields. This stage was designed to perform a quality check on the questions through the preliminary questionnaire, as well as to set up the expert panel. The number of pilot survey experts was determined by Cooper and Schindler (2014) [5], who stated that 25 to 50 surveys make up a good pilot survey.

Stage III - Main Survey. Using the questionnaire and survey method developed in Stage I and Stage II, the main survey was conducted.

The in-depth survey in the Stage I was conducted face-to-face, in the case of Stage II and Stage III survey was conducted with an online tool. The survey questionnaire was developed in Armenian.

While the survey was conducted anonymously, in order to study the differences between expert opinions in different fields, some non-personal data was collected including: level of education, number of years of professional experience, etc.

Questionnaire focused on state support and policy, human capital and education, R&D transfer and other issues relevant to innovative entrepreneurship.

Several criteria have been set for the selection of experts.

- Being included at least in one of the pre-defined four fields,
- Expertise (years of professional experience, number of published works, etc.),
- Knowledge and activities in the field,
- Soft skills (flexibility of thinking, ability to assimilate qualitatively new data, etc.).

The defined criteria were first checked at the entrance stage. In addition to it, a set of survey questions was used to double check the quality.

The selection of experts was carried out through the targeted sampling and “snowdrift” methods. Thus, first a list of important structures in the field of experts is defined for each expert field.

Table 1

Expert fields and targeted expert groups

Expert fields	Targeted expert groups
Government policy and program	Ministries, Parliament, SNCOs, etc.
Entrepreneurial activity	Start-ups, innovative entrepreneurs, etc.
Education, science & research	Universities, scientific institutions, research centers, etc.
Commercial infrastructure & business support services	Supporting structures, consulting companies, incubators, banks, investors, etc.

The number of experts was determined based on the principle of information saturation, by stopping the systematic collection of results after a certain period of repeated ideas.

The survey process lasted 25 days and 103 experts participated. Table 2 illustrates the distribution of the experts who participated in the survey.

Table 2

Demography of experts participated in the survey

Variable	Frequency	Percentage, %
Total	103	100%
By gender		
Male	66	64%
Female	37	36%
By age group		
Up to 30	22	21%
30-45	43	42%
46+	38	37%
By education level		
Primary	0	0%
Secondary	0	0%
Vocational/Professional	0	0%
University/College	4	4%
MA, PhD...	99	96%
Basic activity		
Government policy and program	17	17%
Education, science & research	40	39%
Entrepreneurial activity	21	20%
Commercial infrastructure & business support services	25	24%
Professional area		
Economics	70	68%
Management	11	11%
Engineering	5	5%
Information Technology	4	4%
Mathematics	3	3%
Consultation	2	2%
Finance	2	2%
Marketing	2	2%
Law	1	1%
Physics	1	1%
Economic journalism	1	1%
Political science	1	1%

Using Cronbach's alpha coefficient, the survey data were tested and validated. The survey data had an alpha coefficient of 0.882 exceeding the required level threshold of 0.7 [6].

Research results

First, experts were asked to assess the importance of innovative entrepreneurship for Armenia. Experts believe that innovative entrepreneurship is extremely important for Armenian economic development over the next five years.

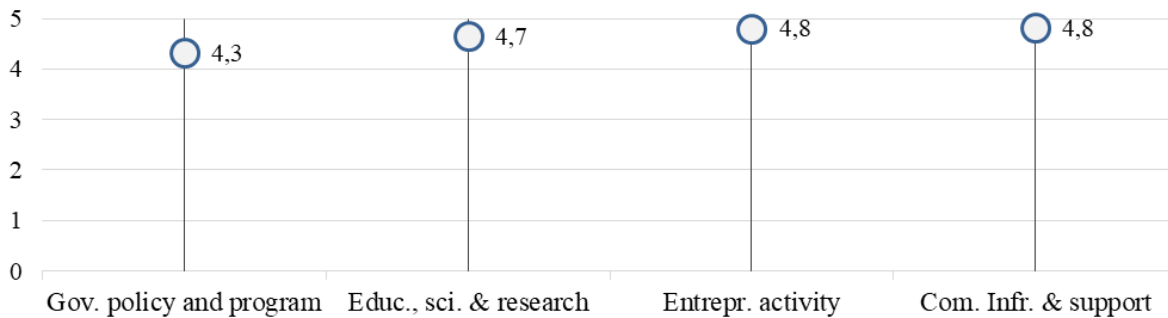


Fig. 1 Importance of innovative entrepreneurship for Armenian economic development over the next five years
(0 - not important at all, 5 - extremely important)¹

Almost all experts agree on this issue. Innovative entrepreneurship is somewhat less important for the government policy and program expert group (Fig. 1).

Government policy and program

According to experts, support for innovative entrepreneurship in Armenia has little priority, especially at the level of local self-government, whereas, as already mentioned, innovative entrepreneurship is extremely important for Armenia's five-year development (Fig. 2). This fact partly explains the relatively low rating of importance of innovative entrepreneurship across the government policy and program expert group.

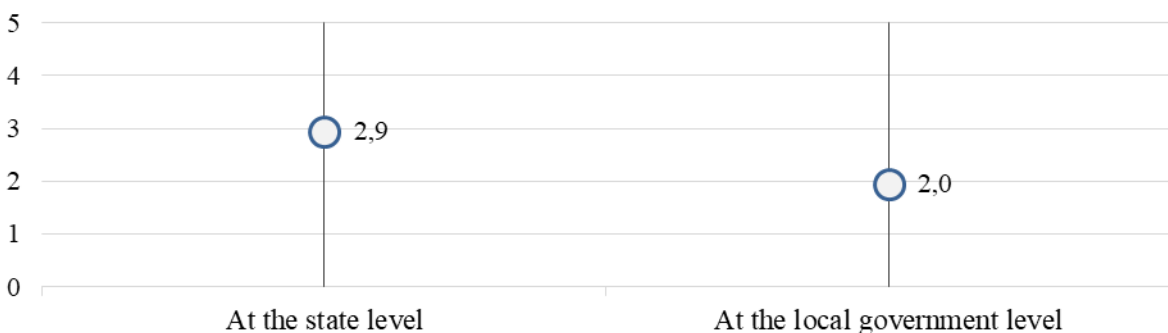


Fig. 2 Priority of supporting innovative entrepreneurship at the state level and at the local government level in Armenia
(0- Not priority at all, 5 - Highly priority)¹

More specifically, when it comes to state support, experts say that there is a lack of both the number of state programs supporting innovative entrepreneurship and the necessary

¹ The figure was developed by the author based on the conducted expert survey

knowledge and efficiency of state institutions. As a result, innovative entrepreneurship in Armenia can hardly benefit from an extensive range of state support (Fig. 3). It is noteworthy that in the case of support for innovative entrepreneurship, the government policy and program expert group rated higher than the average. In contrast, entrepreneurs rated it below average, which highlights differences in perceptions between service provider and recipient quality.

In terms of state policy, the situation is relatively better than in the case of state programs, but still not enough to foster an innovative entrepreneurial environment.

Table 3

Assessments of Armenian government policy and program related to innovative entrepreneurship (0 - completely incorrect, 5 - completely correct)²

	Total	Gov. policy & program	Educ., sci. & research	Entrepr. activity	Com. Infr. & support
GOVERNMENT POLICY					
The people working for government agencies are competent and effective in supporting innovative enterprises	1.6	2.0	1.6	1.3	1.5
There are an adequate number of government programs for innovative enterprises	1.9	2.4	1.7	1.6	2.2
Almost anyone who needs help from a government program concerning innovative enterprise can find what they need	2.0	2.6	1.7	1.8	2.1
GOVERNMENT SUPPORT					
The amount of taxes is NOT a burden for innovative enterprises.	2.4	3.2	2.1	2.4	2.2
Taxes and other government regulations are applied to innovative enterprises in a predictable and consistent way	2.3	2.8	2.2	2.1	2.1
Coping with government bureaucracy, regulations, and licensing requirements is not unduly difficult for innovative enterprises.	2.3	2.8	2.2	2.4	2.1

It can be noted that the three considered factors of state support for innovative entrepreneurship which are effective tax burden, predictability & consistency of regulation, as well as bureaucracy and licensing are equally rated below average (Table 3).

Education

Apart from the steps taken by the government to support innovative entrepreneurship, the experts highlighted the importance of education for the development of the sector. Furthermore, research shows that supporting entrepreneurial education in Armenia is a priority in improving entrepreneurial capacity [3].

According to the expert survey, lifelong learning systems, which are deemed less effective in Armenia, are actually more important for improving entrepreneurship quality.

² The table was developed by the author based on the conducted expert survey

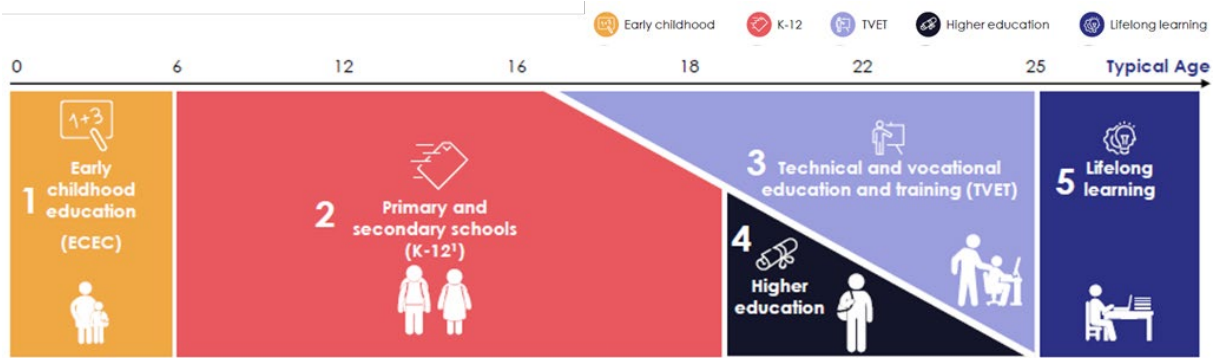


Fig. 3 Learning stages in Armenia [7]

This is because the main objective of other educational institutions is to provide labor supply, whereas lifelong learning can turn already qualified professionals into entrepreneurs (Fig. 4).

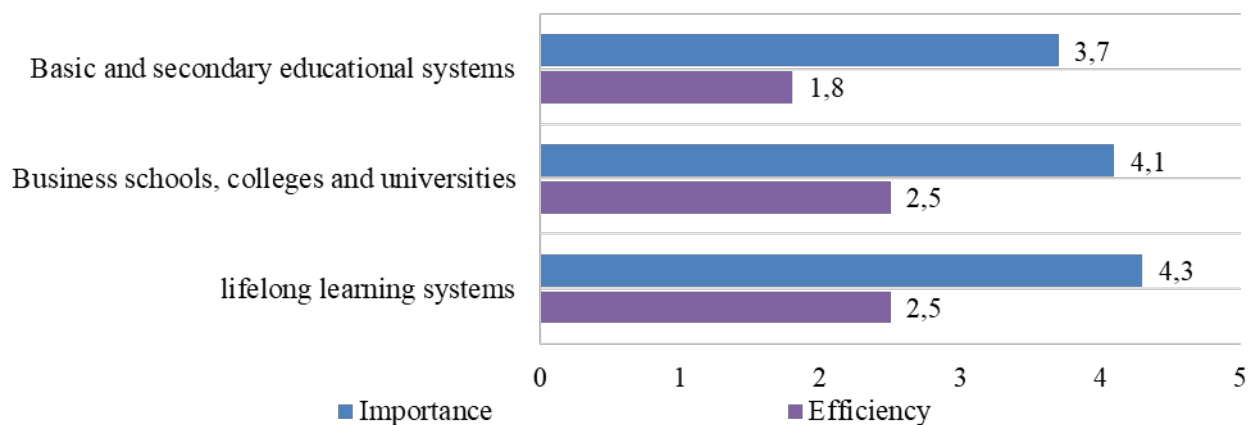


Fig. 4 Importance and efficiency of different educational circles in Armenia from the point of view of innovative entrepreneurship
(0 - not important/efficient at all, 5 - extremely important/efficient)³

The importance of colleges, business schools and universities is rated slightly lower in Armenia, but generally higher for innovative entrepreneurship development (Fig. 4). Nevertheless, it is estimated that education systems are not able to achieve the amount of knowledge transfer they expect. There is agreement among all expert groups surveyed regarding the importance and efficiency of Armenia's education system.

R&D transfer

One of the main problems in the field is the weak commercialization of scientific research, which is a link between the science, technology and the economy. It is clear from the expert survey that there are problems with this process. The issues do not solely relate to commercializing research results (Fig. 5), but also to a weak base of science and technology (Fig. 6).

³ The figure was developed by the author basis on the conducted expert survey

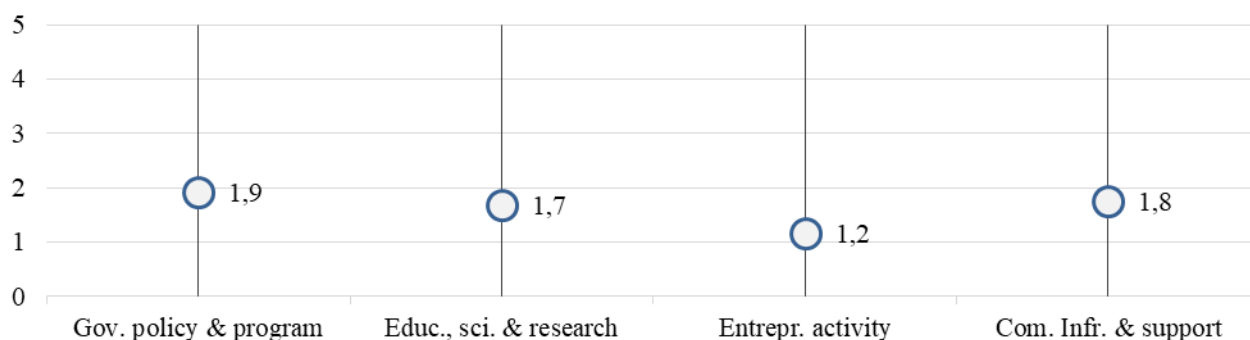


Fig. 5 Effectiveness of transferring new technology, science and other Knowledge from universities and research centers to the economy
(0 - not efficient at all, 5 - extremely efficient)⁴

In other words, the problem is not only the commercialization of innovative solutions, but also development of such solutions. In addition, there is a difference in assessments between the entrepreneurs and the experts representing education, science & research, which indicates a lack of efficiency and poor communication between the two institutions.

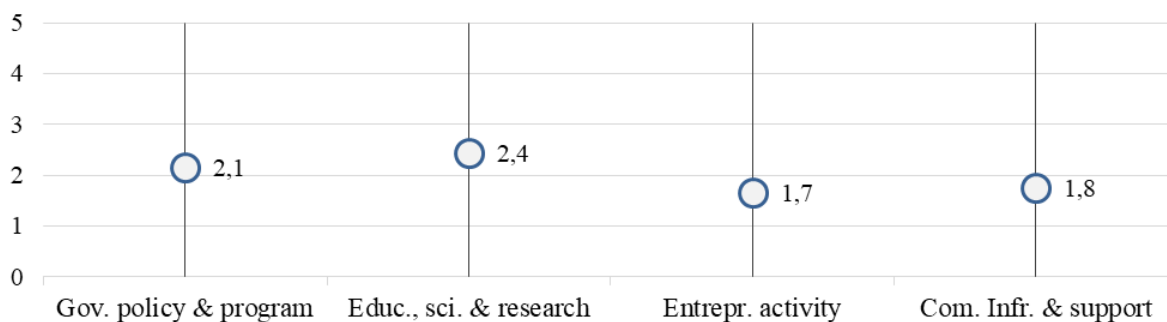


Fig. 6 Science and technology based contribution to creating worldwide innovative enterprises in Armenia (on a scale of 0-5)⁴

Conclusion

According to the expert survey, the government does not give priority to innovative entrepreneurship in Armenia, especially in local government structures, despite the fact that experts consider it of the utmost importance for Armenia's five-year economic development. The conducted survey shows that government support is one of the main reasons for the low level of innovative entrepreneurship: according to the experts, measures being taken by the government to encourage innovative entrepreneurship are very inefficient.

In addition, according to experts, there is a lack of entrepreneurial education in Armenia. Lifelong learning institutions should be established to improve this institution.

Another major issue in the field is the lack of an effective system for the R&D transfer. Expert research shows that Armenia needs a number of reforms in this regard. The problem is not only the commercialization of innovative solutions, but also the development of such solutions.

A cross-analysis of the survey results pointed to a lack of effective communication between entrepreneurs and government institutions. Efforts must be made to improve communication with state support structures and policymakers. Armenia, on the other hand, suffers from a certain discrepancy in communication between its economy and its R&D structure.

⁴ The figure was developed by the author basis on the conducted expert survey

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**ՆՈՐԱՐԱՐԱԿԱՆ ԾԵՆԱՐԿԱՏԻՐՈՒԹՅԱՆ ԿԱՐԻՔՆԵՐԻ ԳՆԱՀԱՏՈՒՄԸ
ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆՈՒՄ. ՓՈՐՁԱԳԻՏԱԿԱՆ ՀԱՐՑՈՒՄ**

Մարկոսյան Ա.Խ.^{1,2}, Թարվոշյան Հ.Վ.³

¹Երևանի պետական համալսարան

²Շուշիի տեխնոլոգիական համալսարան

³Հայաստանի Հանրապետության պետական կառավարման ակադեմիա

Նորարարությունը տնտեսության առաջընթացի շարժիչ ուժն է, որը հաճախ մշակվում և հիմնականում իրագործվում է ձեռնարկությունների առանձին խմբի կողմից:

Այս աշխատությունը նպատակ ունի բացահայտելու Հայաստանում այս խմբի՝ նորարարական ձեռնարկությունների համար առկա խնդիրները և քննարկելու դրանց լուծման հնարավորությունները: Այդ նպատակով իրականացվել է կարիքների գնահատման փորձագիտական հարցում՝ 103 փորձագետների շրջանում, որոնք պատկանում են հետևյալ խմբերին՝ պետական քաղաքականություն և պետական ծրագրեր (1), ձեռնարկատիրական գործունեություն (2), կրթություն, գիտություն և հետազոտություն (3), առևտրային ենթակառուցվածքներ ու բիզնեսի աջակցման ծառայություններ (4):

Սույն հետազոտության շրջանակներում քննարկվել են կառավարության՝ նորարարական ձեռնարկատիրությանն միջավայրի զարգացմանն ուղղված աջակցության

որակը. կրթության կարևորությունը նորարարական ձեռներեցության համար և գիտատեխնիկական մշակումների փոխանցման խնդիրները:

Բանալի բաներ. նորարարական ձեռնարկատիրություն, ձեռնարկատիրական կրթություն, պետական քաղաքականություն, փորձագիտական հարցում, գիտատեխնիկական մշակումներ

ОЦЕНКА ПОТРЕБНОСТЕЙ ИННОВАЦИОННОГО ПРЕДПРИНИМАТЕЛЬСТВА В РЕСПУБЛИКЕ АРМЕНИЯ. ЭКСПЕРТНЫЙ ОПРОС

Маркосян А.Х.^{1,2}, Тарпошян А.В.³

¹*Ереванский государственный университет*

²*Шушинский технологический университет*

³*Академия государственного управления Республики Армения*

Инновации являются движущей силой экономического прогресса, который часто разрабатывается и внедряется в основном отдельной группой предприятий, инновационными предприятиями.

Эта статья направлена на выявление существующих проблем инновационного предпринимательства в Армении и обсуждение возможностей их решения. С этой целью был проведен экспертный опрос по оценке потребностей среди 103 экспертов, принадлежащих к следующим группам: государственная политика и государственные программы (1), предпринимательская деятельность (2), образование, наука и исследования (3), коммерческая инфраструктура и услуги по поддержке бизнеса (4).

В рамках данного исследования мы рассмотрели государственную поддержку инновационного предпринимательства, важность образования для инновационного предпринимательства и коммерциализацию результатов НИОКР.

Ключевые слова: инновационное предпринимательство, предпринимательское образование, государственная политика, экспертный опрос, НИОКР.

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