

## THE SUCCESS OF THE AESM EXPERIMENT ON THE ORGANIZATION OF THE DOCTORAL SCHOOL

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### Abstract

*This article presents the results of the experiment on the organization and functioning of the doctoral school of AESM, founded by AESM in 2011. These results show the evolution of the PhD candidates' competencies, acquired over the period of doctoral studies, the satisfaction level of the knowledge obtained in the compulsory and optional subjects, the opinion of the PhD candidates regarding the fulfillment of the contract terms by the PhD supervisors and candidates themselves, PhD students' work intensity and their international mobility, etc. The survey results show the high efficiency of doctoral studies organized within the present regulatory framework, according to the European models and good practices.*

*Keywords:* doctoral school, doctoral studies, competencies, the satisfaction level, survey results.

### Introduction

By and large, the objectives of Moldovan universities do not differ from those of similar EU institutions and other regions of the world: a better relationship between higher education, research and innovation, greater publicity of research results and training in public space, strengthening the links with the real economy, efficient management of institutions.

The differences concern the institutional system that moves creakingly on the path of reforms and a lack of best practices that would ensure efficiency and effectiveness at all levels of education, including higher education at the third cycle - doctoral studies.

AESM is committed to reducing the deficit of good practice related to training highly qualified specialists through establishing the Doctoral School of AESM in 2011. It focused on the application of European mechanisms for organizing doctoral studies while taking into account existing national restrictions, such as reduced state funding, rigid registration tax, prohibitive NCAA rules, specific mentality of PhD supervisors and doctoral students.

In spite of many criticisms of us, and despite the fact that for all these years AESM has subsidized doctoral training, even if actual training costs are much higher compared with the budgetary funds allocated and the tuition fee for those with private funding, we have tried to be consistent in achieving goals.

In order to assess the results of the experiment, in 2014, the PhD students were asked to fill in an anonymous questionnaire. Data were collected during the International Symposium of Young Researchers, during which doctoral students were required to show maximum sincerity being assured of non-transmission of information that would prejudice their status in any way.

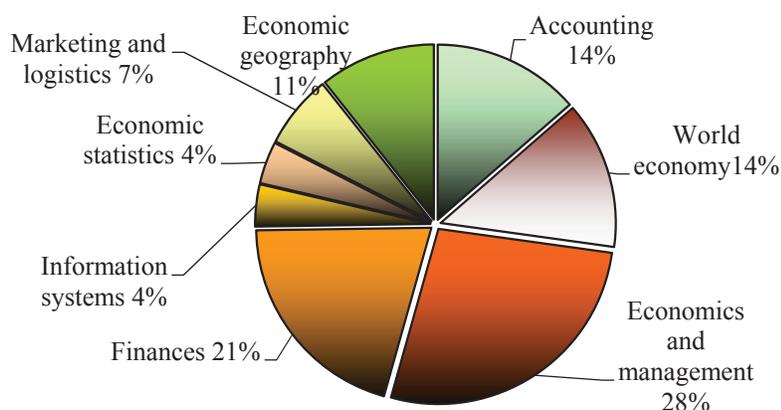
As the end of the analysis of data collected and processed we have come across a series of indicators that identify successes and problems that the doctoral school AESM has faced for those 3 years of experiment, which are grouped into the following categories:

1. General characteristics and motivations.
2. Inputs and outputs of professional experience.
3. Development of skills obtained during doctoral studies.
4. Satisfaction with knowledge obtained from compulsory and optional subjects.
5. Opinion on the fulfilment of contract commitments by PhD supervisors and doctoral students themselves.
6. Intensity PhD students' work and their international mobility.
7. Doctoral students' satisfaction with information and material and technical infrastructure of AESM, as well as the services offered by the doctoral school.

### **1. General characteristics and motivations**

Given the structural aspect, more than  $\frac{3}{4}$  of doctoral students are young people aged 26-35 years, i.e. people with greater creative potential. Secondly, they are predominantly female persons (55%), which is a deviation from the general trend of male domination enrolled in doctoral programs. Thirdly, the PhD students are mostly married, and almost every second PhD student has children, which is another deviation from European and international practice, where most doctoral students are single and have no children. This information shows that the time pressure on doctoral students is high: it comes from professional activity, research activity, but also from the family, especially if the family has children.

The survey-based composition of doctoral students by scientific specialties was as follows:



**Figure 1. The survey-based composition of doctoral students by scientific specialties, %**

Of all doctoral students surveyed, 60% were enrolled on tuition fee basis and 40% were financed from the budget. Thus, **the burden of expenditure on research is supported by 2/3 of PhD students**. The same proportion is maintained regarding the form of study: 60% of respondents were full-time students and 40% - part time. It should be noted that in European countries there is a trend of decreasing the share of part-time doctoral students, since doctoral studies require a significant and continuous effort from PhD students, thus determining their full-time enrolment.

The difference between the newly entered doctoral students who chose doctoral studies upon their obtaining Master's Degree and those having work experience is not striking - 43% against 57%. This report shows the existence of incentives for those who work or were employed to pursue their studies. The PhD students selected their motivations as shown in Figure 2.

Therefore, **AESM doctoral students are ambitious people, 1/3 of them desiring a career advancement and 1/5 – promoting own ideas**. However, the number of those who chose civic orientation is not smaller either - 1/4 **want to do something for society and obtain social recognition**. As PhD students know well that developing a doctoral thesis requires a colossal effort, translating into insignificant gains for holders of scientific title, the share of those who have decided to pursue their studies in hopes of getting more income is very low - 5%. Higher earnings can be obtained only through career advancement; this criterion is a double incentive for doctoral students: psychological and monetary.

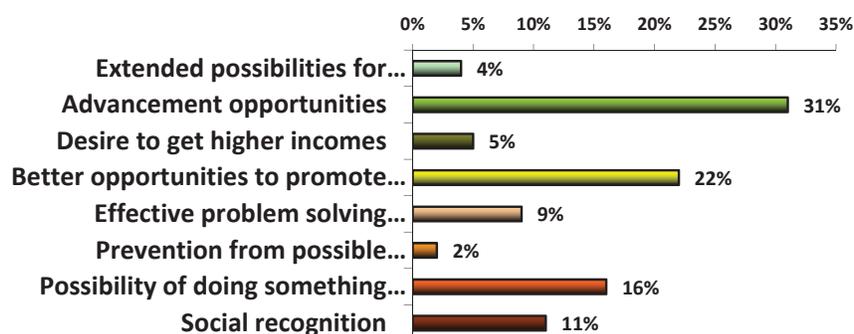


Figure 2. Motivations determining to pursue doctoral studies, %

## 2. Inputs and outputs of experience

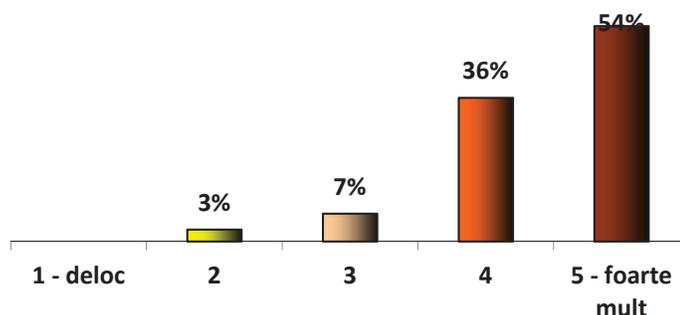
Since 57% of PhD students have had work experience, it is interesting to know which activities they perform making them choose doctoral studies. No less interesting it is to know which path the PhD students will take after completing doctoral studies. The table below answers these questions:

Table 1. Professional inputs and outputs of doctoral studies

Previous Work Experience	Type of activity	Further field of activity
	<b>Research institutions</b>	<b>5</b>
<b>36</b>	<b>Higher education institutions</b>	<b>29</b>
<b>17</b>	<b>Public organizations</b>	<b>26</b>
<b>47</b>	<b>Private organizations</b>	<b>33</b>
	<b>Activity abroad</b>	<b>7</b>

Data from table 1 show that **about half of the doctoral students came to study from the private sector and one third of them will return there. The second of those inputs refers to institutions of higher education: a great part of these people intend to stay in the education system, but under the condition of combining teaching with work in public or private institutions.** The number of those who intend to work in scientific research institutions is very small; 7% of PhD students have the intention to experience the phenomenon of "brain drain".

An important moment related to the efficiency of doctoral studies is the degree of correlation between the theme of PhD thesis and students' professional activities. In this context, the situation at AESM is good: **9 out of 10 PhD students mentioned a very high and rather high degree of correlation.** In the view of the Likert scale, data are presented as follow:



**Figure 3. The degree of correlation between the PhD thesis and current professional activities, %**

What is worse is the doctoral thesis status. **More than half of PhD students develop initiative-focused doctoral theses, with a share of 10% of them written within international projects and the share of 36% of those written within national projects.** The high proportion of initiative-focused themes shows increased financial costs of developing a thesis and lower possibilities for disseminating the research results.

### 3. Evolution of expertise obtained during doctoral studies

The Doctoral School of ASEM was the first in Moldova to implement the system of doctoral studies as learning modules. To assess the effectiveness of organized courses, students have been asked to assess themselves the level of expertise at the beginning and after the first year of doctoral studies (courses are held during the first year of doctoral studies and evaluated with 60 ECTS). The responses have enabled us to notice the following evolution of expertise acquired, according to the Likert scale:

**Table 2. Evolution of expertise obtained during doctoral studies, %**

Areas of expertise	Evaluation	1	2	3	4	5
<b>Theory</b>	ex-ante	-	12	33	48	7
	ex-post	-	-	18	46	36
<b>Research methods</b>	ex-ante	-	14	36	50	-
	ex-post	-	-	15	46	39
<b>Generic skills</b>	ex-ante	4	7	21	50	18
	ex-post	-	-	4	46	50
<b>Language skills</b>	ex-ante	-	-	40	30	30
	ex-post	-	-	18	38	44
<b>IT literacy</b>	ex-ante	-	7	18	43	32
	ex-post	-	-	4	41	55
<b>Research ethics</b>	ex-ante	-	11	30	44	15
	ex-post	-	-	7	33	60

The table data shows a visible improvement of expertise. The scale 2 was exceeded by all doctoral students, with the share of reaching level 4 ranging from 33-46% and that of level 5 ranging from 36-60%. Significant progress has been reported in such expertise areas as research ethics, generic skills, theory and research methods. IT and language skills have shown a modest progress.

#### 4. Satisfaction level of the knowledge obtained in subjects taught

The learning modules covered compulsory subjects and four sets of optional subjects. To assess the quality of courses taught and their need for doctoral training, the questionnaire included questions on satisfaction level of knowledge obtained, according to the Likert scale:

**Table 3. Satisfaction level of the knowledge obtained in compulsory subjects, %**

Compulsory subjects	1. unsatisf.	2	3	4	5 very satisf.
1. Information technologies in economy	4	4	7	55	30
2. Advanced Microeconomics and Macroeconomics	-	8	8	50	34
3. Advanced econometrics	4	8	16	36	36
4. History and methodology of economic research	-		1	36	53
5. Foreign language	-		23	27	46
6. Specialty subject	-		1	15	74

**Table 4. Satisfaction level of the knowledge obtained in optional subjects, %**

Optional subjects	1. unsatisf.	2	3	4	5 very satisf.
1. Project management	-	-	4	33	63
2. Ethics and science communication	-	4	4	33	59
3. Financial management of scientific research	-	-	15	45	40
4. Internationalization of scientific research	-	-	21	37	42
5. Time-management	-	-	5	29	66
6. Intellectual property law	-	-	6	38	56
7. Career management	-	-	10	45	45
8. Leadership and teamwork	-	-	9	27	64

The table data shows a higher **satisfaction level of optional subjects compared to the compulsory ones**. On the one hand, this can be explained by the fact that the optional courses are of shorter duration than the compulsory ones, thus inspiring less boredom. On the other hand, the information obtained is an important signal to teachers that give compulsory

courses: there is a need for improvement of course content taught, teaching methods and assessment techniques.

### 5. Opinion of PhD students on the fulfilment of own contractual commitments and those made by PhD supervisors

An extremely important moment in the efficient and successful completion of doctoral studies is the fulfilment of commitments set out in the contract between the PhD supervisor, PhD Student and doctoral school. Of all obligations of the parties in the questionnaire were included the most important aspects, the PhD students' opinion being expressed as follows:

**Table 5. PhD students' opinion regarding the fulfilment of contractual commitments by the PhD supervisor, %**

Satisfaction level	1 poor	2	3	4	5 excellent
1. Thesis expert	-	-	-	15	85
2. Control of the activities carried out regularly in the development of thesis	-	-	-	19	81
3. Assistance in conducting research	-	-	-	19	81

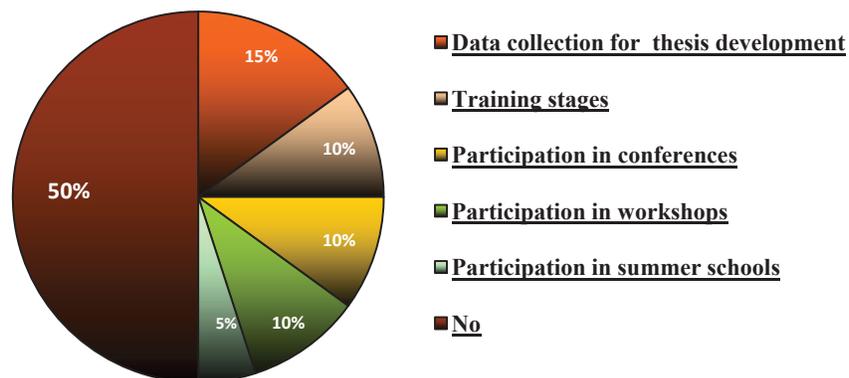
If we compare these two tables, we can see that the PhD students are quite self-critical, recognizing that they fulfil their contractual obligations worse than the PhD supervisors do. Thus, over 80% of PhD students consider that the satisfactory level at which the PhD supervisors fulfil their obligations is "excellent", which is reached only by 37-52% of PhD students. Problems arise especially in conducting research on schedule, which translates into very low rate of defending doctoral theses in due time, as well as regular reporting of activities performed in the thesis, which affects its quality.

**Table 6. PhD students' opinion regarding the fulfilment of own contractual obligations, %**

Satisfaction level	1 poor	2	3	4	5 excellent
1. Conducting research as scheduled	-	-	19	44	37
2. Regular (quarterly) reporting of activities carried out in the development of thesis	-	-	19	33	48
3. Discussing with the scientific advisor of the theoretical and methodological issues that arise in the development of thesis	-	-	7	41	52

A factor with a decisive impact upon the efficiency of doctoral studies is **PhD students' work intensity**—what amount of time is allotted to writing the doctoral thesis as purpose of doctoral studies. According to the responses obtained, **nearly half of PhD students - 46% devote less than 2 hours a day to this activity**, 43% - 3-4 hours, 7% - 7-8 hours and only 4% - more than 8 hours a day. In fact, 8 hours per day must be the amount of time spent on a long the doctoral studies and no exception should be made for a small number of students or for a relatively short period.

In recent years, international mobility has become the factor of increasing the efficiency of doctoral studies. Unfortunately, the lack of sufficient financial means, family issues, current professional activities and insufficient knowledge of international languages have determined **half of ASEM PhD students not to have any internship abroad**. The other half took advantage of internships in the following areas, represented in Figure 4.



**Figure 4. Types of international internships performed by the ASEM PhD students**

Therefore, within information and training-focused internships, the PhD students have been able to take advantage of both participation in conferences, and participation in workshops. No less important are the conditions under which doctoral studies are conducted. We refer to research infrastructure quality and the quality of services provided by the doctoral school. In this context, the satisfaction level of PhD students is as shown in table 7.

**Table 7. The PhD students' satisfaction level of the infrastructure provided by AESM, %**

Indicators	Yes	Partially	No
PhD students' satisfaction level of material and technical infrastructure provided by AESM, %	82	18	-
PhD students' satisfaction level of information infrastructure provided by AESM, %	61	36	3

The data confirm a higher level of material and technical equipment of ASEM and several drawbacks regarding provision with information. One reason would be temporary disconnection from international databases due to outstanding payments to be made by other institutions, subscribed to data systems, rather than ASEM.

**Table 8. PhD students' satisfaction level of services provided by the ASEM doctoral school**

<b>Indicators</b>	<b>1unsatisf.</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5 fully satisf.</b>
<b>Guidance and counselling services are efficient</b>	-	-	-	<b>19</b>	<b>81</b>
<b>The problems that arose were resolved promptly</b>	-	-	-	<b>19</b>	<b>81</b>
<b>The doctoral studies coordinator presents the required information in due time</b>	-	-	-	<b>4</b>	<b>96</b>

The above-mentioned information entitles us to consider that AESM's experiment of organizing and conducting doctoral studies has been successful and effective. Our next step is to prepare the provisional authorization of the AESM Doctoral School's operation and implementation of the stipulations laid down in the Regulation on the Organization of Higher Education Doctoral Programme, 3d cycle, developed by the Ministry of Education of the Republic of Moldova.