E-LEARNING IN BUSINESS AND ENTREPRENEURSHIP: AN EVIDENCE OF SERBIA, IRAN AND INDIA

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Abstract

By the advent of Internet, new techniques and approaches emerged in the world of learning. Universities and educational institutions began to take advantage of the benefits associated with this new phenomenon. In this way, learning became a new experience for those who were not able to attend in the classrooms and afford its expenses. Learning in a new environment with its unique characteristics makes learning an exciting process, for both students and teachers. The focus of this paper is on students of business and entrepreneurship, as the agents. Then, we investigate the e-learning status in three main countries, i.e. Serbia, Iran, and India. In order to gather the required data, an online questionnaire was designed and randomly sent to the respondents in different countries, who were studying business or entrepreneurship. The results reveal that there is a growing tendency to e-learning opportunities in different countries. Moreover, based on the data gathered from all around the world, it could be inferred that both entrepreneurial intention and program selection have positive effect on success in an entrepreneurial career. The positive effect of entrepreneurial intention on success in an entrepreneurial career was approved in all countries of our study; but the effect of program selection was not meaningful.

Keywords: *E-learning, Entrepreneurship, Agent-based Approach, Developing Countries*

INTRODUCTION

The history of education is full of dramatic changes, among which e-learning is considered as a critical paradigm shift. Delivery of knowledge and accessibility of information are dramatically changing due to the growing rate of improvements in internet and multimedia technologies (Zhang et al., 2004). Moreover, e-learning content is different from other materials, as it lets all agents play their role in a more interactive and exciting manner. Today, students and teachers feel free to tag, store, move, and even interact with their learning content (Harris, 2005). In this regard, paying enough attention to what makes this new experience more interesting for beneficiaries is a critical issue to be investigated.

Agent based approach offers many advantages in comparison with other approaches. Here, we take students as the agents who might /might not intend to attend such courses. To narrow down the research topic, we will examine the propensity to attend and select such courses, and its effect on their success in an entrepreneurial career in students of business and entrepreneurship in three developing countries, i.e. Serbia, Iran, and India. In this paper, the authors firstly go through the theoretical background. Then, we propose our research methodology and elaborate the methodological concerns, and the findings will be discussed. Finally, the paper concludes with some major findings, limitations, and future directions for research.

THEORETICAL BACKGROUND

According to recent research (Liarokapis 2010), the introduction of virtual environments into higher education has the potential to bring a positive change in the learning experience. Namely, the online learning environment is quite different from a traditional classroom. In other words, online courses require participants to take on new and different teaching/ learning behaviors. What makes e-learning content different from other educational materials is that it can be disassembled as individual learning objects, tagged, and stored for reuse in a variety of different learning contexts (Harris, 2005). Recent research has also compared online learning to face-to-face learning (Hoben et al. 2002), explored the effectiveness of online tools such as discussion boards and chat rooms (Spatariu et al. 2004), addressed evaluating effective online instruction (Graham et al. 2001; Wentling and Johnson 1999), and assessed the value of online courses in specific fields of study (McCombs 2000). In particular, the use of virtual worlds to reach remote, distance, and online learners is creating new opportunities for face-to face engagement and motivation with difficult-to-reach groups.

Draves (2002) provides a list of reasons why he believes the Internet enhances learning, including such advantages as being able to learn at a peak time of the day,

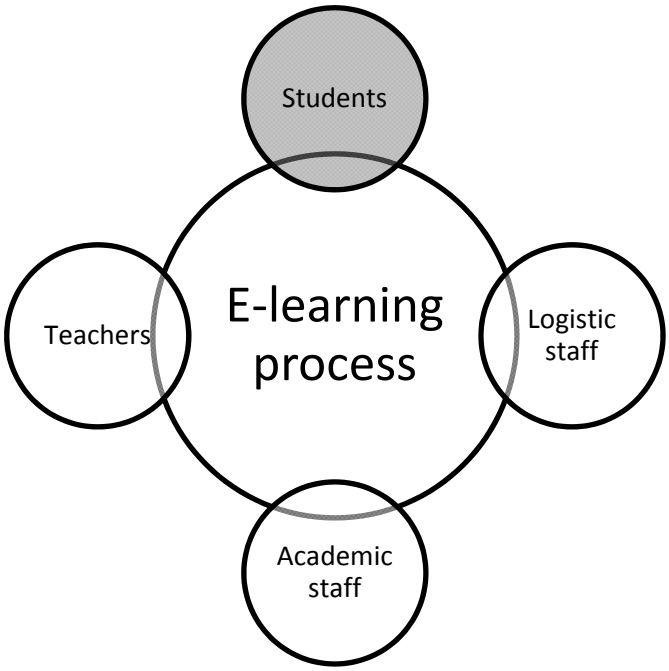
learning at your own speed, accessibility to much information, an ability to track personal progress, and the capability to test personal learning efforts. In addition, the e-learning students were in an environment where professors respond to their needs on demand (Radovic Markovic 2007). However, most learning environments neglect the learning services and pedagogy aspects of e-teaching. Hence, its development has lagged behind the massive investment in hardware and teacher training in using ICT (Newton & Rogers, 2001).According to some researchers, e-learning pedagogy should incorporate the form of learning pedagogy but goes beyond it to include a deeper study into the incorporation of instructional strategies that take into account of real-time personalized learning content-to-learner adaptability (Teo et. al. 2005).

For years, e-learning systems used to rely on traditional ones, and followed the footsteps of the previous learning approaches. But, nowadays, e-learning systems mostly focus on personalization, and the relations between the individuals in a larger community (Hung, 2001; Ip & Naidu, 2001). In this way, agents' role became more significant, as a series of agents proposed by several authors (Al-Sakran, 2006). For instance, pedagogical agents (Johnson & Shaw, 1997; Selker & Coach, 1994), teaching agents (Marin & Hunger, 2004), agents for retrieval (Hiltz & Wellman, 1997), and agent infrastructure (Holt et al., 2001) are among the agents mentioned in the literature. Indeed, the agent approach is more efficient in analyzing the impact of different decisions in various scenarios by considering different actions. "Agent-based systems, with their autonomy, proactivity, reactivity, sociality, collaboration and intelligence, when coupled with educational applications, can result in personalized learning systems" (Obonyo, 2011).

A lot of research has been done focusing on adoption of intelligent agents to integrate e-learning systems and support e-learning pedagogy. Literature in the areas of intelligent tutoring systems, virtual mentors, and adaptive hypermedia has produced techniques and tools that can provide improved learning outcomes (Brusilovsky, 2000; Melis et al., 2006). Therefore, the intelligent agents are one of the most useful tools with various functionalities and usages in e-learning. Namely, intelligent agents have received considerable attention by scientists over the last decade because of their great potential for addressing the limitations of current e-learning systems by supporting learning processes. They target and deliver just-in-time learning materials required by the individual learners (Gregg 2007). According to Gregg's opinion software agents can be used to support instructors and domain experts with course design and delivery as well as individual learners by personalizing course materials based on learning objectives. In addition, the intelligent agents provide pro-active resource discovery, and offers value-added information services and products (Chou & Seng, 2009).

In a nutshell, we could argue that the e-learning paradigms and techniques cover a wide range of the literature. However, the literature investigates this area from different points of view, such as teacher centered and students centered learning, investigating the topic based on an agent based approach could be more fruitful. In this paper, the authors emphasize on the students as the most important agents of e-learning process. The following figure shows the most important agents in a typical e-learning process. It should be mentioned that, here, by "agents" we mean human agents, and not other kinds of agents.

Figure 1. *Human agents in a typical e-learning process*

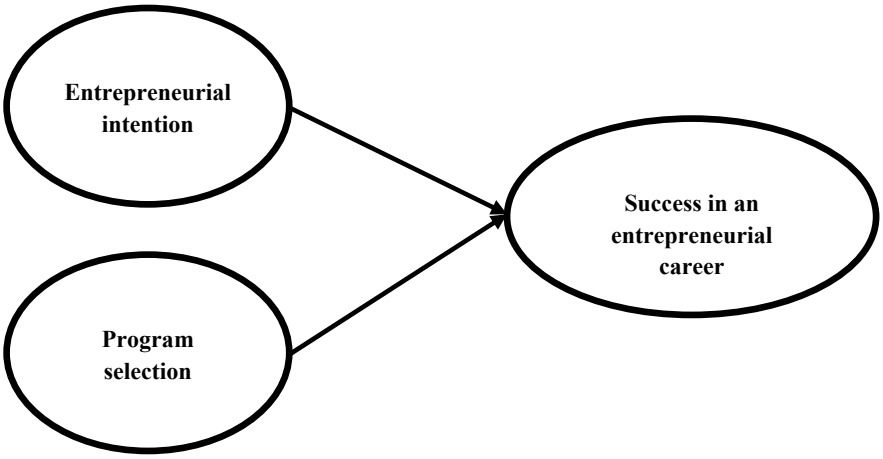


Source: Authors

METHODOLOGY

In this study, the authors used a quantitative research design in order to gather the required data. The main idea of the research concentrates on the e-learning status of students of business and entrepreneurship in three main countries, i.e. Serbia, Iran, Turkey, and India. In order to gather the required data, an online questionnaire was designed and randomly sent to the respondents in different countries, through the Internet. Afterwards, the authors used SPSS to analyze the data. In total, 126 questionnaires were gathered from the mentioned countries. The following research model is used to evaluate the students as one of the most important agents of a typical e-learning process.

Figure 2. *Research model*



Source: Authors

DISCUSSION

According to the outputs of a curve estimation, following tables and figures are presented. Authors separately discuss the results of the curve estimations for Intention-Success, and Selection-Success.

Table 1. *Curve estimation for Intention-Success*

Model Name		Intention-Success
Dependent Variable	1	Success
Equation	1	Linear
	2	Logarithmic
	3	Quadratic
Independent Variable		Intention
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified
Tolerance for Entering Terms in Equations		.0001

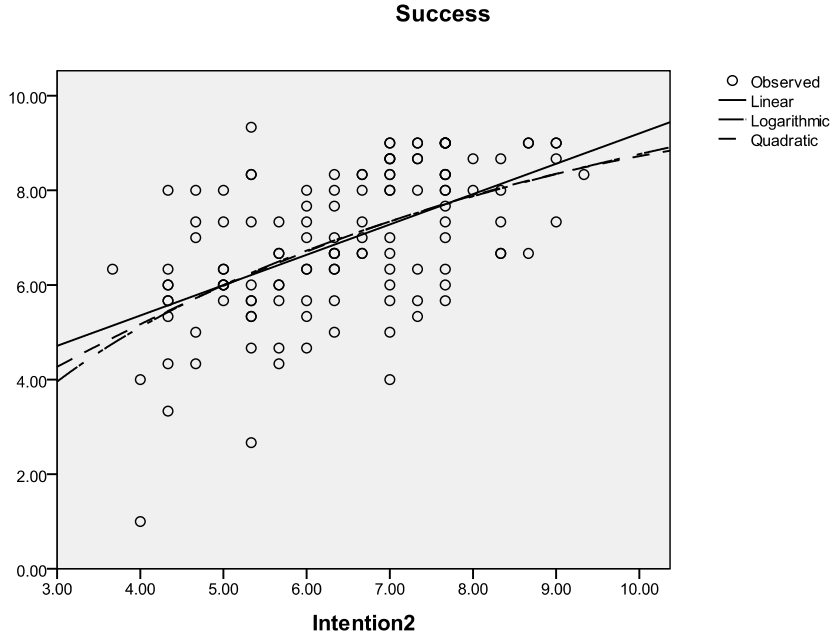
Source: Authors

Table 2. *Model Summary and Parameter Estimates for Intention-Success*

Dependent Variable: Success								
Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	.303	53.865	1	124	.000	2.788	.642	
Logarithmic	.306	**54.638**	1	124	.000	-.431	3.994	
Quadratic	.306	27.095	2	123	.000	1.039	1.209	-.044
The independent variable is Intention.								

Source: Authors

Figure 3. *Curve estimation for Intention-Success*



Source: Authors

Table 3. *Curve estimation for Selection-Success*

Model Name		Selection-Success
Dependent Variable	1	Success
Equation	1	Linear
	2	Logarithmic
	3	Quadratic
Independent Variable		Selection
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified
Tolerance for Entering Terms in Equations		.0001

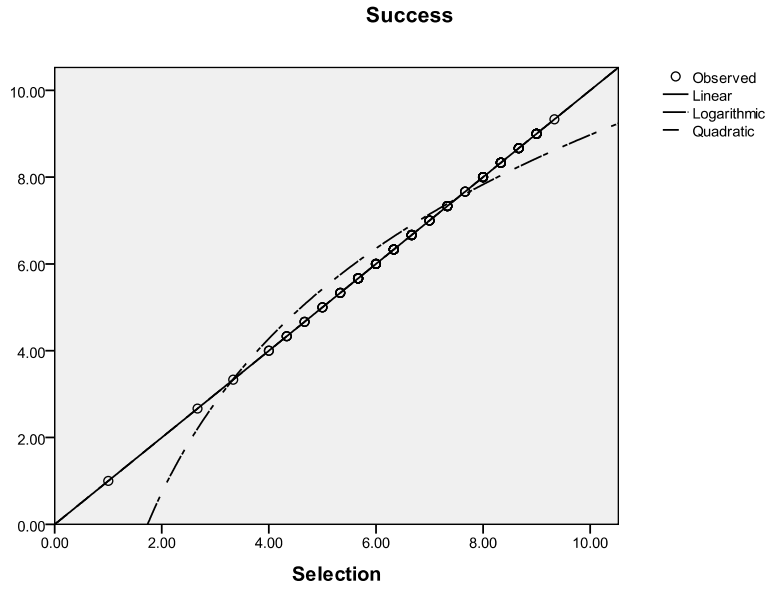
Source: Authors

Table 4. *Model Summary and Parameter Estimates for Selection-Success*

Dependent Variable: Success								
Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	1.000	.	1	124	.	.000	1.000	
Logarithmic	.902	**1134.929**	1	124	.000	-2.822	5.123	
Quadratic	1.000	.	1	124	.	.000	1.000	.000
The independent variable is Selection.								

Source: Authors

Figure 4. *Curve estimation for Selection-Success*



Source: Authors

In both cases, curve estimation shows that logarithmic estimation best fits as the F value is greater (F=1134.929) than other estimations, and also is significant. In order to discuss the results of our study, we review the e-learning status in each of the cases briefly. Afterwards, the results of our study are presented to elaborate the topic.

Business and Entrepreneurship E-learning in Serbia

Serbia does not have extensive experience deploying online studies and virtual faculties. Forming an international learning network may enhance e-learning opportunities in Serbia as well as in countries that are developing or in transition (Radovic Markovic, 2007) Because the functionality of the technologies and the benefits of virtual learning to learners and professors have been misunderstood, the entrepreneurial process although improved in Serbia has been impacted due to the lack of awareness (Radovic Markovic, 2007a).

As Radovic Markovic and Bodroski Spariosu (2010) mention in their study, Serbia does not have broad experience deploying online education and virtual faculties. Forming an international learning network may enhance e-learning

opportunities in Serbia as well as in countries that are developing or in transition. Due to the functionality of the technologies and the benefits of e-learning to students and teachers have been misunderstood, the entrepreneurial process although improved in Serbia has been impacted because of the lack of enough awareness (Radovic Markovic, 2007). An aggravating factor for faster development of Internet studies lies in the fact that the internet education in Serbia has a low level of interest among students. Furthermore, most of the students cannot imagine " classroom without walls", as well as quite a different way of learning (Radovic Markovic, 2012).If Serbians or citizens of other nations become more familiar with the techniques, potential learners as well as educators may be able to effectively discern the pros and cons of how e-learning would enhance and improve education (Radovic Markovic and Bodroski Spariosu, 2010). Hopefully, recently a number of studies have been done in Serbia in order to investigate the different aspects of e-learning, especially in the field of business and entrepreneurship (e.g. see, Radovic Markovic, 2007; Radovic Markovic et al., 2009; Radovic Markovic and Bodroski Spariosu, 2010). Building a more inclusive distance learning environment in Serbia involves making technological choices built on flexibility and an ability to respond quickly to changes in constantly evolving technology and informational resources. Collaboration, involving teachers, mentors, and instructional designers who truly represent hard to reach learners, and a willingness to invest monies in developing a cyber-infrastructure that reaches all learners regardless of where they live will be crucial (Radovic-Markovic, M.2009a).

As it is illustrated in the following tables and figures, intention has a positive meaningful impact on success. As F value is greater in the linear model, this model best fits in our case. But, the results for the impact of selection are not presented as there were no significant results.

Table 5. *Curve estimation for Intention-Success in Serbia*

Model Name		Intention-Success in Serbia
Dependent Variable	1	DSERBIASUCCESS
Equation	1	Linear
	2	Logarithmic
	3	Quadratic
Independent Variable		DSERBIAINTENTION
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified
Tolerance for Entering Terms in Equations		.0001

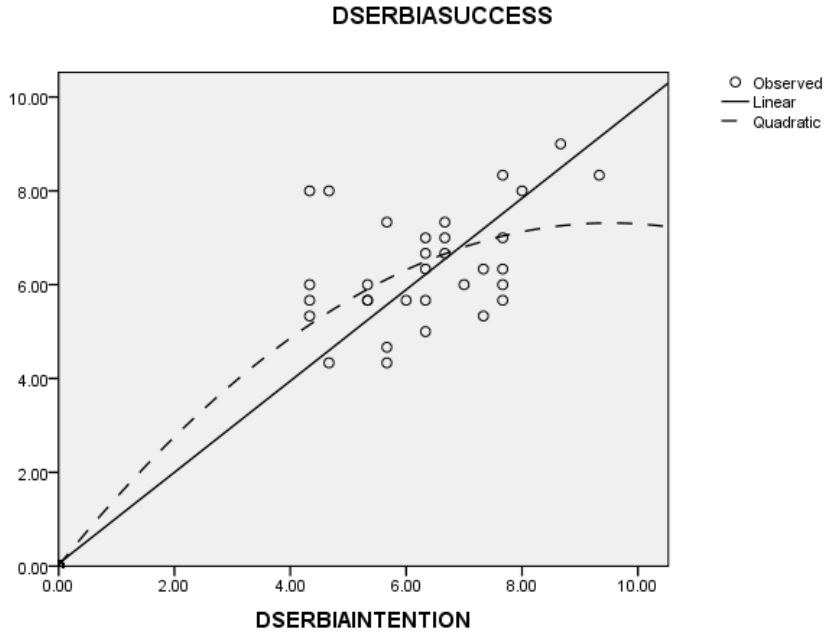
Source: Authors

Table 6. *Model Summary and Parameter Estimates for Intention-Success in Serbia*

Dependent Variable:DSERBIASUCCESS								
Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	.945	**2148.687**	1	124	.000	.053	.973	
Logarithmic[a]	.	.	.	.	.	.000	.000	
Quadratic	.959	1445.248	2	123	.000	.010	1.534	-.081
The independent variable is DSERBIAINTENTION.								
a. The independent variable (DSERBIAINTENTION) contains non-positive values. The minimum value is .00. The Logarithmic and Power models cannot be calculated.								

Source: Authors

Figure 5. *Curve estimation for Intention-Success in Serbia*



Source: Authors

Business and Entrepreneurship E-Learning in Iran

Based on the findings of Powell and Patrick (2006), virtual education in Iran is delivered by both private sector and governmental organizations. The Ministry of Education (MOE) administers e-Learning under three main areas: purchasing software for teacher professional development in order to create online content, administration of the country's four Intelligent Schools (distance learning schools which deliver both content online and on compact disc), and to make a network to connect all schools. In the private sector of e-Learning, several companies provide online courses in geography, English, and software for high school students, as well as completion certificates which are approved by the MOE. Students from the urban areas and large schools are participating in online courses. E-Learning in Iran is entirely based on a blended model of learning. Programs and courses are developed by the government and are free of charge for the students. The government has been working to create education standards, but they have not yet been published. There are presently no entirely online courses in the country; however, a private company is developing independent courses for first year high school students, which the students themselves will pay to enroll.

During the past five years, the government has been working to train and familiarize teachers with the development of electronic content and online courses. Several teachers now have these skills and are using them with the computers and Internet in their classrooms. Teachers are developing the online content, but the majority of it is still created and sold to schools by private companies. Several teachers in Iran are also collaborating with other teachers from all over the world in online projects sponsored by iEARN and ENO. At the university level, Iran is working with Italy, Germany, and the United Kingdom to develop online courses. Because the technology is so new, people are scared of it. The government is worried about the lack of enough filtering of the Internet. Funding is also an obstacle for the growth of online learning. Although there are several obstacles facing Iran in the area of e-Learning, they have still managed to educate students and teachers on the importance of it. Over 20,000 students have participated in some format of e-Learning in Iran (Powell and Patrick, 2006).

As JafariMoghadam et al., (2012) argue: Iranian universities are experiencing the second stage of higher education and in some cases are approaching the third stage. Moreover, entrepreneurship is one of the most attractive disciplines in Iran. Entrepreneurship education has a long history in the world, but it has existed for less than one decade in Iran. Therefore, entrepreneurship education is a newer field in this country. UT, as a pioneer university in Iran, launched entrepreneurship programs at master level in its Faculty of Entrepreneurship in 2005. Increasing demand for entrepreneurship education in Iran, especially from entrepreneurs, governmental managers and the private sector, who cannot leave their job on one hand and the growth of information technology in higher education in Iran on the other hand, has made the UT offer virtual learning as a new way for delivering entrepreneurship

education. Before entrepreneurship, the University suggested two programs for virtual learning which were appreciated by students. This experience has led to applying e-learning technology to entrepreneurship education. However, it is important to determine if e-learning technologies are appropriate for entrepreneurship education. This program attracted many postgraduate students in Iran. The main concern is "what are the challenges of this type of education in the field of entrepreneurship?" The entrepreneurship education in Iran has been accompanied by virtual systems and movements toward the third stage of higher education.

As it is illustrated in the following tables and figures, intention has a positive meaningful impact on success. As F value is greater in the linear model, this model best fits in our case. But, the results for the impact of selection are not presented as there were no significant results.

Table 7. *Curve estimation for Intention-Success in Iran*

Model Name		Intention-Success in Iran
Dependent Variable	1	DIRANSUCCESS
Equation	1	Linear
	2	Logarithmic
	3	Quadratic
Independent Variable		DIRANINTENTION
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified
Tolerance for Entering Terms in Equations		.0001

Source: Authors

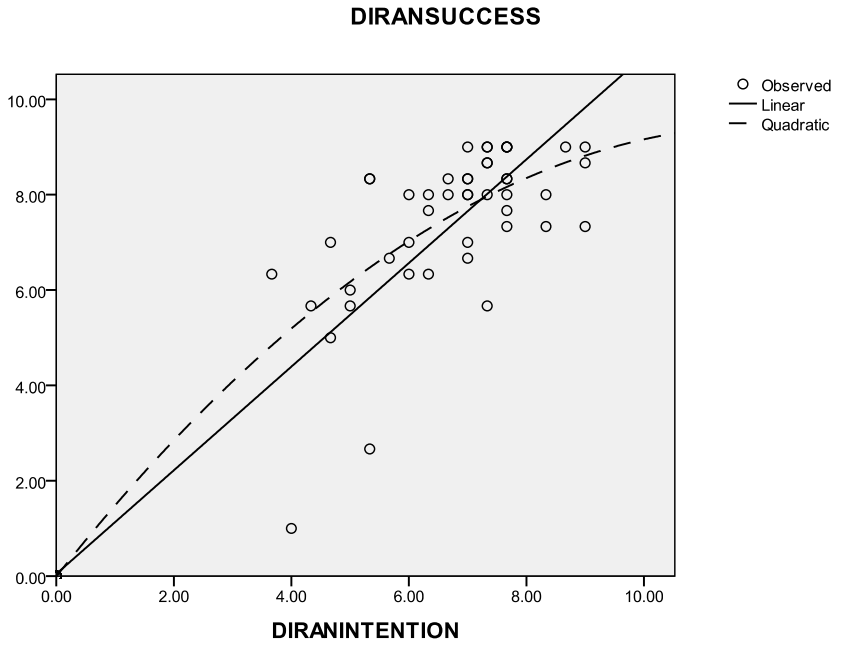
Table 8. *Model Summary and Parameter Estimates for Intention-Success in Iran*

Dependent Variable:DIRANSUCCESS								
Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	.955	**2617.189**	1	124	.000	.046	1.087	
Logarithmic[a]	.	.	.	.	.	.000	.000	
Quadratic	.961	1532.639	2	123	.000	-.007	1.555	-.064
The independent variable is DIRANINTENTION.								

a. The independent variable (DIRANINTENTION) contains non-positive values. The minimum value is .00. The Logarithmic and Power models cannot be calculated.

Source: Authors

Figure 6. *Curve estimation for Intention-Success in Iran*



Source: Authors

Business and Entrepreneurship E-learning in India

Based on the evidences provided by Varma (2009), the E-learning Outsourcing industry in India is expected to achieve revenue growth by $603 million by the end of 2012. The Compound Annual Growth Rate (CAGR) is expected at 15 percent per annum, which might also waver till 2010 due to the global economic recession. A report published by a business intelligence and service provider firm ValueNotes 'entitled e-learning Outsourcing 2009: Advantage India' reveals that the growth rate of the e-learning industry will be slow for coming 6-8 quarters, but will attain its pace by then. The e-learning industry earned a profit around $341 million in the year 2008. The aspects of the industry are growing as 50 percent of the industry growth comes from the small scale companies. In 2002, the profit earned by the industry was around $6 billion, which went up to about $20 billion in the year 2008. The industry has spread widely throughout the country, with many companies and NGO's taking active part in it. One such organization, Smile, claims to place 70 percent of its students in the year 2009, through its Twin e-Learning Programme (STeP).

Self paced e-learning allows the students to pursue their choice of courses along with their jobs. And by the concept of e-learning, around 3 lakh students are planning to take part in the CAT 2009. Prestigious institutions like Indian Institute of Management (IIM), Indian Institute of Technology (IIT) and Indian Institute of Foreign Trade (IIFT) are actively adopting e-learning courses. The current economic slowdown has affected the e-learning institutions in the country, but NGO like Smile Foundation are confident enough to meet the ongoing challenges and are planning to come out successfully. *"We started the e-learning program two and half years back and now have over 5000 students in 50 centers. We have our blue print ready for further expansion to 100 more centers, and it will happen as soon as we get the funding from our national and international sources"*, said Naresh Choudhary, COO, Smile Foundation. However, companies like Hyderabad based Swingwind Technologies which mainly concentrates on the schools and colleges feels the heat. "A couple of deals which we have got through, are now being postponed but once the economy bounces the deals will come back. So it is just a time thing. We will have to wait," said the Founder Prasanth R. Marreddy.The greatest challenge faced by the players in the industry is the acceptance of the concept of e-learning amongst the people as they do not understand the value of the software for learning purposes. Still founders and heads of most e-learning companies in India are confident about the growth and the huge profits that lie in the coming years (Varma, 2009).

As it is illustrated in the following tables and figures, intention has a positive meaningful impact on success. As F value is greater in the linear model, this model best fits in our case. But, the results for the impact of selection are not presented as there were no significant results.

Table 9. *Curve estimation for Intention-Success in India*

Model Name		Intention-Success in India Model Description
Dependent Variable	1	DINDIASUCCESS
Equation	1	Linear
	2	Logarithmic
	3	Quadratic
Independent Variable		DINDIAINTENTION
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified
Tolerance for Entering Terms in Equations		.0001

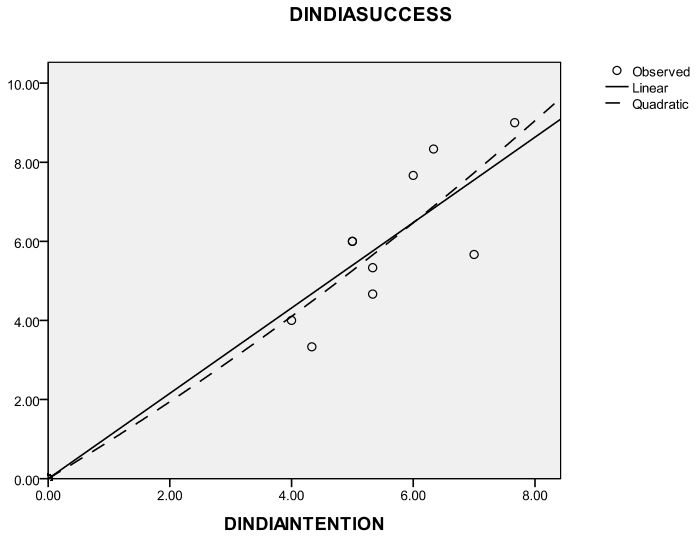
Source: Authors

Table 8. *Model Summary and Parameter Estimates for Intention-Success in India*

Dependent Variable:DINDIASUCCESS								
Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	.968	**3696.367**	1	124	.000	-.004	1.079	
Logarithmic[a]	.	.	.	.	.	.000	.000	
Quadratic	.968	1880.292	2	123	.000	.000	.920	.026
The independent variable is DINDIAINTENTION.								
a. The independent variable (DINDIAINTENTION) contains non-positive values. The minimum value is .00. The Logarithmic and Power models cannot be calculated.								

Source: Authors

Figure 6. *Curve estimation for Intention-Success in India*



Source: Authors

CONCLUSION

As mentioned earlier, agent based approach offers many advantages in comparison with other approaches in studying the behavior of each agent separately. Here, we took students as the agents who might /might not intend to attend in such courses. To narrow down the research topic, we examined the propensity to attend and select such courses, and its effect on their success in an entrepreneurial career in students of business and entrepreneurship in three developing countries, i.e. Serbia, Iran, and India. In this paper, the authors firstly went through the theoretical background. Then, we proposed our research methodology and elaborated the methodological concerns, and the findings will be discussed. The results revealed that there is a growing tendency to e-learning opportunities in different countries. Moreover, based on the data gathered from all around the world, one might conclude that both entrepreneurial intention and program selection have positive effect on success in an entrepreneurial career. The positive effect of entrepreneurial intention on success in an entrepreneurial career was approved in all countries of our study; but the effect of program selection was not meaningful. Future researchers are invited to concentrate on other aspects of the e-learning and also it is suggested to investigate other agents of a typical e-learning process. During this research we faced a series of limitations, the most important among which were: to access students in different countries, to gather the required data in a systematic manner, etc.

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