

Contribution of University on Economic Development

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Abstract: Economic development refers to economic growth accompanied by changes in output distribution and economic structure. These changes: improvement in material, a decline in an agriculture's share of gross national product(GNP), increasing share of industry in GNP, increasing education level, substantial technical advance and etc. Human Development Index is one of the measurement of Economic development. Economist need skillful labor force is provided by universities to ensure qualified more production with value added for economic growth and development. We saw that universities contributed innovation to become monopol in world market, relationship between domestic private companies and foreign ones, ensuring sustainable development, to become guide for foreign and domestic firms. In addition, universities contributed as information office. In this study, we analyzed contribution of technology and internet to the university and contribution of universities to economic development of country. We have worked and searched in private university in foreign country for 12 years. So, we aimed productive study with work experience abroad, observing and interactive study with academicians in other universities. We analyzed our study under three main titles; Functions of universities and categorize of countries. How to improve level of economic lesson by using internet among countries. Contribution of universities to level of economic development

Introduction

During the last few centuries the western economies have experienced an economic growth never before seen in history. This change has mainly been caused by knowledge, compared to previous history where land, natural resources, labor or machines were the factors determining economic growth and development. Long run economic performance during the last few decades, known as the knowledge economy or the information age, has consequently been driven by innovation and technological change instead, so, The production of new knowledge plays an important role in economic growth, international trade and regional development. (Rindeskar, 2005) The central purpose of this study is to analyze the importance of human capital are educated by university for generation of economic development through its effect on knowledge production in the innovation. A key driver to achieve the economic, social and physical regeneration of city and region University makes environment where science and business work together. (Goddard, 2009) It was seen that there is impact of university on economic development. Innovation and research which are studied by universities are the main argument on development of any country. These are the key of ensuring welfare.

Functions of University and Classification of Countries

Functions of University

The Universities are schools of education as well as research. But, main reason for their existence is not to be found either in the just knowledge conveyed to the students or in the just opportunities for research afforded to the academicians in faculty. These functions could be performed at a cheaper rate. (www.jstor.org/pss/40218022) When we pay attention definition of economics we see two major topics: unlimited human wants and limited resources. The twenty-first century is universally recognized as a time for developing knowledge-based economies and digital information technologies. With the rapid socia-economic changes, the democratization of government, structural shifts in production and the rapid growth of value systems of recent years, serious new challenges have presented themselves, with regards to the maintenance and function of higher education. In order to meet these challenges, higher education must continue to advance through innovation, effective adjustments, planning and ability to predict

the future or vision. Universities are not only a school of knowledge, culture and technological innovation but they are also important centers for the cultivation of a nation's resources. Therefore, by bringing the university's function into full play, can it provide an essential foundation for motivating academic and technological innovation and assist with the economic development of a country. It is also clear that university competitiveness is a major indicator of a nation's competitiveness and that the excellence of a nation's universities is an important key to increasing a nation's sense of competitiveness. (Mu-lin, 2002) The two poles of the social function of universities are the academics inherent in universities and the more diverse demands from society, which are dialectic unity. Academics are inherent in universities and the function of universities that focused on social demands is the sociality of universities. Academics are the internal cause of multiple functions of universities while social demands are the external one. The potential of universities finds expression in the external cause of social demands, without which the potential is only potential elements and will never turn into reality. On the contrary, without the potential of universities social demands cannot make the products which society is in need of. Exchange between universities and society is the bridge that connects the two parts. Universities as a social organization have basic characteristics of all social organizations. Sociality is one feature of human organizations, being that "organizations composed of human all exist in society as part of it and for the sake of it." The potential that enables universities' exchange is their academic activities, which underlie the functions of universities. Universities' function of criticism is closely linked with the objective, fundamental, and pioneering academic activities. "It is the characteristic of universities' serving society that in addition to paying attention to the immediate demands of society, universities should be pioneers to be ahead of social progress and provide new thoughts and opportunities for sustained development." It is the objective and pioneering academic activities that enable universities to correct the defects resulting from the pursuit of self-utility on the part of other social organizations and to criticize society. The university function of international communication is the product of the objective academic activities, which makes it possible for people from different countries and with different ideologies to make discussions and exchanges on objective issues in the contemporary world. (Liu, 2005)

Classification of Countries

We believe that there is a close relationship between function of university and economic development. We think that you will no doubt about the importance and broad applicable of economics after reading and studying this study. Let's take an example one branch in university as faculty of economics and administrative sciences. Our aim is to allow students to understand economic environment, And to show you how to apply economic principles to actual events. We tried to show most of our examples applications, and extensions are drawn from the real world.

We can count some way to define economics:

- is the social science that deals with such problems
- is a study of mankind in the ordinary business of life
- is a broad-ranging discipline
- is the study of the use of scarce resources to satisfy unlimited human wants.

Also we can count some definition of economists: are innovators, tinkers, and inventors in their own way.

Societies face lots real world problems, and history shows that economic ideas can produce waves to solve these problems. When we categorize countries in the world we see three ones. These are:

1-Developed Countries

2-Developing Countries

3-The Least Developed Countries

Each society requires to past upper level to live comfortably. For that Economic Growth and Economic Development should be at level required. The economy sometimes grows and sometimes shrinks. World faced with global crisis and reduced production speed, so, global GDP fell down from 3.7 per cent in 2007 to 2 per cent in 2008 (UN, 2009)When we compare developed and least developed countries we see that there is big gap each other. It is said that per capita income in developed country can be over 12 000 \$ yearly. On the other hand a dollar a day means 365\$ yearly. In addition society experiences such problems: Such as unemployment, price stability, unproductive production, unfair competitive, inequity distribution income, maximizing profit, shut-down point etc. to solve these problems economists use some instruments. To produce more and more production we increase input but this is not enough. We need time and high level technology. Latest technology gives a hand to understand easily. High level technology is ensured and used to reproduce by universities. For example let's analyse relationship between internet and a faculty. I mean university innovates technology then uses it to improve teaching's quality.

How to Improve Level of Economic Lesson by Using Internet Among Countries

When you study economics, you are probably wondering, why should we study economics? Actually, people study economics for a number of reasons. Many people study economics because they hope to make money. Some of them are worry that they will be illiterate if they don't know or understand the laws of supply and demand. People are also concerned to learn about how we can improve our environment or why countries such as Russia and china are moving from a planned to a market economy. As a voter we are interested about economy. Because which party's way is better for us. By using our vote we become to select party's prior investment. At the same time if we understand economy we can put forward an idea about meaning of economic growth, per capita income, distribution of income, foreing direct investment, exchange rate, economic crisis (*Faced with the current economic crisis, many governments have identified enhanced ICT use as a strategy to quicken recovery*), and etc.

The word *economy* comes from the Greek word *oikonomos*, which means "one who manages a household." At first, this origin might seem peculiar. But in fact, households and economies have much in common. Economics is social science concerned with the production, distribution, exchange, and consumption of goods and services. Economists focus on the way in which individuals, groups, business enterprises, and governments seek to achieve efficiently any economic objective they select. Lesson of economy is presented at Universities, institutions of higher education that offer programs beyond the high school level. Colleges and universities provide necessary training for individuals wishing to enter professional careers. They also strive to develop students' creativity, insight, and analytical skills. To train good economist at universities, we can benefit from internet for teaching, systematic presentation of facts, ideas, skills, and techniques. (Samuelson & Nordhaus, 2001)

Although human beings have survived and evolved as a species partly because of a capacity to share knowledge, teaching as a profession did not emerge until relatively recently. The societies of the ancient world that made substantial advances in knowledge and government, however, were those in which specially designated people assumed responsibility for educating the young. Internet or computer-based global information system is composed of many interconnected computer networks. Each network may link tens, hundreds, or even thousands of computers, enabling them to share information with one another and to share computational resources such as powerful supercomputers and databases of information. The Internet has made it possible for people all over the world to communicate with one another effectively and inexpensively. Unlike traditional broadcasting media, such as radio and television, the Internet does not have a centralized distribution system. Instead, an individual who has Internet access can communicate directly with anyone else on the Internet, make information available to others, find information provided by others, or sell products with a minimum overhead cost. The Internet has brought new opportunities to government, business, and education. (UN, 2005)

Many individuals use the Internet for communicating through electronic mail (e-mail), for news and research information, shopping, paying bills, and online banking. Educational institutions use the Internet for research and to deliver courses and course material to students, for example distance learning (*Distance services, dispensed by cell-phone, internet telephony or websites, can allow skills that are in short supply to benefit larger numbers of people.*) (UNDP 2009) Scientists and scholars use the Internet to communicate with colleagues, perform research, distribute lecture notes and course materials to students, and publish papers and articles. As we look internet users by level of development 2000-2004 (see Table) we can see that developed countries is 73% in 2000 57% in 2004 years, developing countries are 25% in 2000 years 38% in 2004, South-East Europe and CIS 2% in 2000 years 5% in 2004 years. At the end of 2008, there were an estimated 1.4 billion Internet users around the world. In developing countries, the number of users grew by a quarter, or almost five times faster than in developed countries. As a result, developing countries now account for more than half the world's Internet users. A little over one fifth of the world's population used the Internet in 2008. (UN, 2009)

Classification	2000	2001	2002	2003	2004
Developed Countries	285 429 829	344 585 162	402 012 514	433 307 644	501 756 193
Developing countries	96 367 167	137 712 413	204 925 742	256 845 766	332 998 292
South-East Europe and CIS	5 982 116	8 963 563	13 653 481	23 745 186	40 877 486

Table 1: Internet users by region and level of development

Contribution of Universities to Level of Economic Development

Economic development refers to economic growth accompanied by changes in output distribution and economic structure. These changes: improvement in material, a decline in an agriculture's share of GNP, increasing share of industry in GNP, increasing education level, substantial technical advance and etc. Human Development Index (HDI) is one of the measurement of Economic development. As we pay attention table below we see that HDI contains three parts such as life expectancy, adult literacy, and GDP. GDP measures the total output and total income of an economy. If we care about the happiness of a typical individual in an economy, it makes more sense to look at GDP per capita. We can understand whether income is shared equally between its citizens. (Begg & Fischer & Dornbusch 1997) We can measure level of country's economic development by looking HDI too. All three units in this index are related directly with education, talent, knowledge, and learning. All these activities happend and occur in university. According to Human Development Report 2009, all countries are classified if HDI of country is higher than 0.900 it is very high human development country, if HDI of country is between 0.899 and 0.800 it is high human development country, if HDI of country is between 0.799 and 0.500 it is medium human development country, if HDI of country less than 0.499 it is low human development. (UNDP, 2009) When we see table below we can say that Turkmenistan is medium human development country in 1998.

Turkmenistan/ Human Development Index (HDI)								
	Life Expectancy years	Adult literacy above 15 (%)	Combined gross enrolment ratio (%)	Real GDP per capita \$	Life Expectancy Index	Educational Attainment Index	Real GDP per capita \$	HDI
1997	64.7	98.8	71.0	2683	0.690	0.897	0.427	0.671
1998	64.9	98.8	65.0	3162	0.665	0.875	0.493	0.678

Table 2 :Turkmenistan HDI

It is accepted as inevitable that we live in a world accelerated change. As people, we can see creative opportunity, or we can be demoralized as we watch companies and people come and go. As a region, we are always going to be in the position of retention -- companies, people, and capital -- as we also search economic development opportunities for expansion and attraction. The reality is that regions like Central Upstate New York compete with regions around the world that are already organized to attract capital investment and jobs. If we look at regions that are considered economic powerhouses, it's easy to see a pattern of success. Such as; the availability of skilled labor, access to capital, investment in R&D, proximity to colleges and research institutions, transportation and information links to markets, networks of suppliers, favorable tax and cost of business structures, business-friendly local government climates and regulatory environments, and a high quality of life. They are also places that project success because they have mounted highly effective regional marketing programs based on their unique strengths. (Hartsock 2007) Most universities' primary economic roles are the training of highly qualified personnel and the production of new knowledge. While these roles are more important than ever in today's knowledge economy, universities have also moved to occupy a new and central role in regional innovation ecosystems. (TRRA 2007) Universities need to focus upon innovative research activities which improve the quality of the regional environment. This includes research that impacts the traditional areas such as tourism, or more broadly, the service sector, biomedical research, coastal/environmental issues, and oil and gas. (Trumbach & Lundberg p.3) None of this serves to prove that universities are unimportant. In fact they are crucial. The government has acknowledged that the most successful technology groupings in the USA and UK are located in geographical proximity to centres of research excellence in universities, such as Stanford, University of California, *Massachusetts Institute of Technology* in Cambridge Massachusetts, Austin in Texas and Cambridge, UK. (Fazackerley, Smith & Massey 2009) New roles require new approaches. Universities are starting to move away from a narrow focus on patents and licensing to acknowledge knowledge flows out into the market, and to establish supportive policies, programs and infrastructure to make these processes more efficient. Universities are also starting to support entrepreneurship and to lead or partner with other regional stakeholders in regional economic development efforts.

It was seen that universities have lots contributions, but here we will study three main key roles. The following sections provide a sample of the different roles universities can play with respect to innovation and economic development.

First; Development of highly qualified personnel

Providing skilled graduates is one of the primary economic contributions of universities and a highly effective means of transferring knowledge and increasing the absorptive capacity of firms for innovative ideas and discoveries. Firms are attracted to the large pools of talent that universities generate and the availability of highly qualified R&D personnel is a key factor in R&D site selection. Regionally, the concentration of creative, highly skilled talent is a critical factor in cluster development and dynamic urban economies. Universities that are effective generators of technology-based growth are able to recruit and/or retain star researchers. Universities also play an important role through industry education and training partnerships, delivering non-degree educational programs targeted to different industry sectors. These may include graduate certificate programs in technical or management areas, executive development programs, weekend MBA programs, and corporate-focused distance education. (TRRA 2007) *The increased importance of human capital is most evident in the well developed economies where the structure has undergone considerable changes since the 1980's. According to Romer (1990) the output per worker increase that characterizes the western world during the last decades is explained by both technological progress and a more effective labor force. Some economists stress that a well functioning higher educational system is one of the most important elements of the modern economies. Not only because of the development and growth in the long run but also because of the necessity of being competitive in the globalized world and international market of today.* (Gerde, 2005) Also we should pay attention that economic growth and development is spreading to the east of world because of skillful labor force. Nations who understand importance of education improve their standard of living.

Second; Research and knowledge production

Universities benefit regional firms through knowledge spillovers – knowledge generated by universities at lower cost than firms can produce it themselves. As firms located by universities tend to obtain knowledge at lower cost than firms farther away, firms concentrate around universities creating beneficial cluster economies. While universities are not the main source of external knowledge for firms, high-technology regional economies are usually attached firmly by great research universities. These contribute patents, licenses, contract research, consulting and problem solving for industry, design, engineering and testing services, often early in the innovation cycle when firms and industries are seeking ideas.

Strong industry-university connections are needed, however, to connect a region's research and industry strengths. Industry is rarely involved in the choices universities and their faculty make when it comes to building research strengths. Some state governments fund R&D, technology applications, and other programs to foster emerging industries or build stronger relationships between industry and universities. Overall, though, efforts to create critical mass in research areas critical to industry are important and do have an effect.

Third; Technology transfer

Most universities in North America today have some form of technology transfer office (TTO). However, commercialization indicators (patents, licenses, university spin-offs) show that significant and sustained commercialization success is concentrated among only a small number of institutions. Most technology transfer is actually informal, involving publications, conferences, and informal exchanges. Patents rank low in most industries except for pharmaceuticals, therefore, indirect mechanisms for the transfer of new ideas and innovations may be more important. Most favour licensing for cash, followed by licensing for an equity stake and sponsored research. This revenue maximizing approach tends to encourage a "home run" mentality, focusing limited time and resources on the technologies that seem to promise the greatest and fastest payback. Technologies with longer-term potential or diffuse public benefit tend to be overlooked.

Most universities experience technologies "going out the back door." Many researchers circumvent their TTO when they patent and patents with greater value are taken directly to the private sector more often. Firms express difficulty in dealing with TTOs, citing staff inexperience, lack of business knowledge, and a tendency to inflate the commercial potential of patents. As a result of this dynamic, the more fundamental goal – to maximize the potential for university-based inventions to result in commercialized new products and innovations – remains unmet in many cases. Successful universities seek to maximize commercialization volume and speed rather than revenue,

although their revenues often remain substantial. They have begun to codify a broader range of technology transfer pathways and to redefine the role of their TTO. There are different volume models of technology transfer but all:

Provide rewards for moving innovations into the marketplace

Focus on faculty as the key agents of innovation and commercialization

Emphasize greater standardization in faculty and industry interactions.

Universities are only one side of the technology transfer equation, however. Firms need the absorptive capacity to realize the commercial benefits of basic research. (TRRA, 2007)

Universities in different countries

Recent changes in the universities of developed countries suggest the emergence of an entrepreneurial model of academic research. The key feature of this model is acceptance by universities that they have a responsibility not only to provide teaching and carry out research, but also to contribute directly to economic growth of the society. This new model is being presented to developing countries as a way of encouraging entrepreneurship among their researchers, of making an awareness of the needs of businesses, and of attracting industry funding. Some successful examples to which this model has been applied in Mexico, and in Brazil. There are various obstacles to the widespread adoption of the entrepreneurial model of a university in the developing world. For example, universities can introduce changes to facilitate and promote relationships with industry, and indeed many have already done so. But if the demand from industry for local knowledge production is weak and unchallenging, the result will probably be an underdeveloped entrepreneurial university. Another source of difficulties, (see table 3), is that developing countries have few researchers, and, given the general lack of resources in such countries, these have to work with tight budgets. ([http://www.scidev.net/en/policy-briefs/the-role-of-universities-in-knowledge - production-.html](http://www.scidev.net/en/policy-briefs/the-role-of-universities-in-knowledge-production-.html))

	GDP	Population	R&D spending	Researchers
Developed countries	61.1%	22.3%	84.4%	71.6%
Developing countries	38.9%	77.7%	15.6%	28.4%

Table 3. Distribution of the world's GDP, population, research and development spending and academic researchers

There are some 3 300 higher education establishments in the European Union and approximately 4 000 in Europe as a whole, including the other countries of western Europe and the candidate countries. They take in an increasing number of students, over 12.5 million in 2000, compared with fewer than 9 million ten years previously. They employ 34% of the total number of researchers in Europe, with significant variations from one Member State to another (26% in Germany, 55% in Spain and over 70% in Greece). In order for European universities to play a key role in achieving the strategic goal set at the Lisbon European Council, i.e. to make the European Union (EU) the most competitive and dynamic knowledge-based economy in the world, this Communication is intended to start a debate on the role of European universities in the knowledge society and economy.

(http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11067_en.htm)

Conclusion

There is a close relationship between universities and economic development. It was analyzed that to reach high level standard of living and to produce qualified goods and services country needs skilfull labor force and high level technology. Those who pay attention HDI see three main legs ; production, education, and life expectations which are related with university and development. People in this century knew importance of competition and to be succeed in that race they are using latest technology for example rate of using internet is rising year by year. Perhaps, rate of using internet in developing countries is higher than developed countries. It is clear that the role of universities in innovation is great too. Universities that are active at the heart of successful technology groups do not just spin out companies. They develop highly-skilled people who move between industry and academia; they develop businesses and provide expertise; they produce knowledge that is used by technology businesses; they provide public space in which people from various overlapping branches of research meet. It was seen that universities contribute directly nations' economy, especially this impact was more in developed countries than developing countries. It is clear that the following sections provide a sample of the different roles, universities can play with respect to innovation and economic development.

First; Development of highly qualified personnel

Second; Research and knowledge production

Third; Technology transfer

Time and technology is the main factor to produce more but both of these factors are used by skillful labor force who is talented in university. Secondly innovation can be done in university too and transferred to company or/and market. These functions of universities above should be reachable and cheaper too. Because this implements spirit of definition of economics.

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