

## A qualitative statistical analysis of the performance of open and distance learning: a case study in Turkey

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**Abstract:** "Even if you have to start to work before you attend to a university, Open and Distance Learning gives you the equality of opportunity so that you feel confident". This paper outlines a study that explores the online learning experience for undergraduate and postgraduate students in Turkey. The project was adopted a face-to-face inquiry approach and expected to present students' reflections by online studies. The study foregrounds the students' voice records that were collected in nine biggest cities in Turkey. Drawing upon their stories, the paper seeks to provide the benefits from online learning environment and focuses on what undergraduates/postgraduates are doing and the effect of distance learning on their family, social, and business life. Although the effects of the conventional face-to-face education are mostly positive, learners are also required to assess the pros and cons of their distance learning programs. According to the results of the analysis, open education system provides people with mobility and economic confidence, increases life standards and ensures equality of opportunities in education.

**Key words:** Perceptions, Economic confidence, Opinions, Distance education, Student satisfaction

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### 1. Introduction

Education process, with its multi-dimensional presence, is maybe the most important tool to determine a society's progress. Education contributes to people by not only direct-financial dimensions but also by indirect-moral ways. Human capital described as "better educated and more healthy population" (Psacharopoulos, 2000) is seen as the most important determinant of comparative advantages and competitive power in today's global world. Romer (1990) put his arguments on the meaning of human capital for economic growth and development. He drew attention that research and development process depend on qualified workers that could only be nurtured via education. Being based on the pioneering model of Jacob Mincer (1974), many researches have shown that education level increases gainings. Schultz (1961a, 1961b), Denison (1962), Becker, Murphy and Tamura (1990), Jorgenson and Fraumeni (1992), Bassanini and Scarpetta (2001), Krueger and Lindahl (2001), Sianesi and van Reenen (2003), Breton (2003), de la Fuente and Domenech (2006), Hanushek and Woessmann (2008), Patrinos and Psacharopoulos (2011) and Gennaioli et al. (2013) are the studies that proved the positive effect of education on macroeconomic and individual returns. There are studies showing that education has positive effects also on social welfare, income distribution and poverty. Adelman and Morris (1973), Psacharopoulos (1977), Psacharopoulos and Ying

Chu (1992), Tsakoglou and Cholezas (2005), Orazem, Glewwe and Patrinos (2007), Raffo and Dyson (2007), Berg (2008) and Patrinos and Psacharopoulos (2011) are some of the epitome studies.

Outcomes of the studies on the effects of the conventional face-to-face education are positive. The question is that whether the positive effects of face-to-face education still apply when it comes to open and distance learning, or not? Despite insufficient studies in this field, empirical outcomes shows that open and distance learning methods also include significant economic and social gain. For example, Ferdousi (2010) laid diminishing emphasis effect of open education on gender inequality in Bangladesh. Ofoegbu (2009) stated that open and distance education has made females have more income and be able to catch the opportunities that males already got. Aderinoye and Ojokheta (2004) obtained such results as open and distance education had significant effect on income increase, welfare and sustainable growth in Nigeria. Ambe-Uva and Adegbola (2009) reached similar results in Nigeria and stated that open and distance education had positive effects on social upheaval, poverty, conflict and marginalization and human development. Kanwar and Taplin (2001) put distance education in China, Hong Kong, India, Pakistan, Sri Lanka and Bangladesh, effected females and children positively. Olakulein (2006) asserted that distance education had positive effects for women coping with inabilities. Ghadoliya (2012) noted that open and

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The first item in section 1 aimed to explore whether ODL made participants have greater mobility or flexibility in the way which they had before. Fig. 3 indicates the proportions of the individual mobility of the participants after they were enrolled the program or graduated from the program in each city. The participants were asked to indicate the extent of their agreement or disagreement with the relevant statement on a four-point scale. The response alternatives were *Agree*

(scored 1), *Disagree* (scored 2), *Not totally* (scored 3), and *I had already have individual mobility* (scored 4). Among the cities where the participants agreed that ODL had the greater effect on their individual mobility, the largest rate was occurred in Adana as 19% approximately. On the other hand, 23.08% of the participants in İzmir disagreed that ODL had the greater effect on their individual mobility than before whereas 60% of the participants agreed that they had already had individual mobility than before.

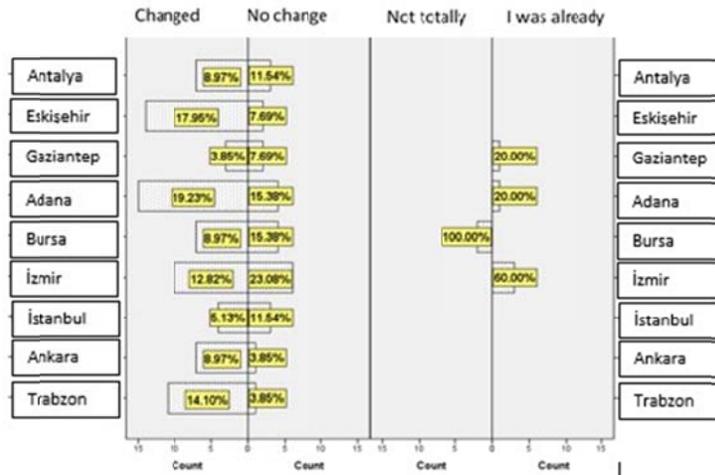


Fig. 3: Individual Mobility

The second item was asked to measure the contribution of ODL to participants' life in terms of economy. Figure 4 shows the rates of the response alternatives such as *Agree* (scored 1), *Disagree* (scored 2), *an indirect relationship could be* (score 3), *I have no job right now* (scored 4), *Not totally* (scored

5), on a five-point scale in each city. According to the results, 19.44% of the participants agreed in İzmir that ODL had an economical contribution to their life whereas 18% of the participants approximately in Gaziantep and Trabzon disagreed that ODL had an economical contribution to their life.

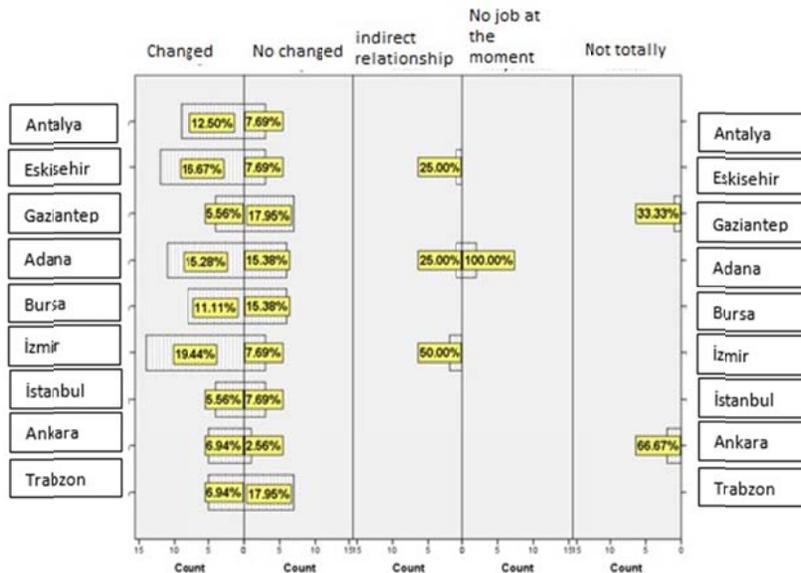


Fig. 4: Economical contribution

Analysis of variance (Anova) was used to determine whether there is a difference in each item summarized in Table 1 by locations of the survey. *F* test found a significant difference in the first item obtained by the locations,  $F(8, 76) = 2.994, p < 0.05$ . Hence the respondents defined themselves poor since they did not meet the needs of living before they had

been trained differed significantly among the locations of the respondents. There is also a significant difference in the second item obtained by the locations,  $F(8, 72) = 2.348, p < 0.05$ . In other words, the respondents whose salary had been positively increased by ODL differed significantly among the locations of the respondents. The next *F*

test for item 3 also found a significant difference in the locations of the respondents who had been positively affected to be hired,  
 $F(8, 79) = 3.994, p < 0.005$ .

Another  $F$  test found a significant difference in the locations of the respondents who complained about the ODL system,  $F(8, 104) = 2.566, p < 0.005$ .

**Table 2:** Anova results

Items	F Value	P value	df
Defined yourself as a poor since you did not meet the needs of living before you were trained	2.994	0.006	8.76
There was any kind of financial contribution to your poverty when you were in the ODL program	2.348	0.027	8.79
There is a positive effect to be hired	3.994	0.001	8.79
Any comment on ODL system	2.566	0.014	8.10

The participants were also asked to reflect upon their view with ODL system. Relatively small things such as physical instruments for learning, locations of the examinations, the frequency of the exams, needs for assisting books could distinguish the respondents from the ODL system. Undoubtedly, ODL positively contributed to the education system that was also accepted by 40 (32.3%) of the survey respondents:

“Distance education and it’s web page is fine... I am using it without any problem.”

Sixteen of the survey respondents (16.9 %) referred to the low knowledge of ODL in public area although they felt engaged with the higher education:

“I feel engaged with ODL, I have a student card so it is fine to be a member of the university even if you are an online student however it does not support the graduates in public area to find a job easily (12.9%)... More advertisement for ODL graduates is needed (4%).”

A number of respondents (12.1%) described how ODL develop its learning instruments. They described various new strategies as learning instruments that ODL could provide for new students:

“Books should be very thin that we could only have the summary of the topics (4%)...ODL system in sense of being different might provide an application for cell phones to students in learning quickly (7.3%)... Books should be rewritten as they are quite poor or lessons should be reached by ipad as well since teaching and learning is mediated through technology (0.8%).”

Eleven of the respondents (8.9%) also pointed out that they felt engaged with ODL since they provide us the opportunity of distance education:

“Even if you have to start to work before you attend to a university, ODL gives you the equality of opportunity so that you feel confident.”

This study has also indicated that nearly 30% of the respondents impacted negatively due to poor or unqualified questions in the exams, increased number of exams during the year, being very far from your home to take an exam at each period in one year and each time making the location of your examination changed from the last time.

**4. Conclusion**

In this research, the role of Anadolu University Open and Distance Education System on economic and social welfare and its effects on decreasing poverty are studied. Outcomes of the qualitative research based on face-to-face interviews shows that Anadolu University Open and Distance Education System has increased students’ and graduates’ economic and social welfare and it has significant effect on reducing poverty. Outcomes of the research are consistent with human capital and endogenous growth theories and the literature. According to the results of the analysis, open education system provides people with mobility and economic confidence, increases life standards and ensures equality of opportunities in education. The graduates of the system, generally express their satisfaction and suggest that ‘new strategies for learning to be improved’ and ‘elaboration of tests and test frequencies’. In the period this research is completed (April 2014), 5,440,290 students are registered on the whole higher education system. 2,545,278 of them are registered on open education system. That means 47% of the whole higher education students receive education from open and distance education systems. Lastly, many of them are students that registered on Anadolu University Open and Distance Education System. In this context as being capable of reaching masses, Anadolu University Open and Distance Education System has equivalent effects on individuals and society as conventional face-to-face education do.

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**References**

Adelman, I., and Morris, C. T., *Economic growth and social equity in developing countries*, 1973.  
 Aderinoye, R., and Ojokheta, K., “Open-Distance education as a mechanism for sustainable development: reflections on the Nigerian experience”. *The International Review of Research*

- in *Open and Distance Learning*, 2004. 5(1), 174-256.
- Ambe-Uva, T., and Adegbola, E., "Open flexible learning as strategy for enhancing human security in Nigeria". *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 2009. 5(3), 148-156.
- Bassanini, A., and Stefano, S., "The driving forces of economic growth: Panel data evidence from OECD countries". *OECD Economic Studies*, 2001. 33, 2001/II, 9-56, OECD, Paris.
- Becker, G. S., Murphy, K. M., and Tamura, R., "Human capital, fertility and economic growth", *The Journal of Political Economy*, 1990. 98(5), 12-37.
- Berg, S. van der, *Poverty and Education*, International Academy of Education, 2008. Education Policy Series 10, UNESCO.
- Breton, T. R., *Education, Human Capital and National Income*. 2003. EER 2003-115, George Mason University, July 27.
- de la Fuente, A. and Domenech R., "Human capital in growth regression: How Much Difference Does Data Quality Make?" *Journal of the European Economic Association*, 2006. 4(1), 1-36.
- Denison E. F., *The sources of economic growth in the United States and the alternatives before us*, New York: Committee for Economic Development, 1962.308.
- Ferdousi, N., "Distance education for law promotes gender equity in Bangladesh", *Asian Journal of Distance Education*, 2010. 8(1), 81-86.
- Gennaioli, N., La Porta, R., Lopez-de-Silanes, F. and Shleifer, A., "Human capital and regional development". *The Quarterly Journal of Economics*, 2013. 128(1), 105-164.
- Ghadoliya, M. K., *Empowering Women Through Self-Help Groups: Role Of Distance Education*, 2012. [www.col.org](http://www.col.org) (accessed on 08.09.2012).
- Hanushek, E. A. and Woessman L., "The role of cognitive skills in economic development", *Journal of Economic Literature*, 2008.46(3), 607-668.
- Jorgenson, D. W. and Fraumeni B. M., "Investment in education and U.S. economic growth", *The Scandinavian Journal of Economics*, 1992. 94, 51-70.
- Kanwar, A. S. and Taplin, M. (Editors), *Brave new women of Asia: how distance education changed their lives*, 2001. The Commonwealth of Learning, Vancouver, Canada.
- Krueger, A. B. and Lindahl, M., "Education for growth: why and for whom?" *Journal of Economic Literature*, 2001. 39(4), 1101-1136.
- Mincer, J. A., *Introduction to 'Schooling, Experience and Earnings'*, 1974. Columbia University Press, New York.
- Ofoegbu, I. F., "Female access to basic education: a case for open distance learning (ODL)", *Edo Journal of Counselling*, 2009. 2(1), 46-57.
- Olakulein, F. K., "Distance education as a women empowerment strategy in Africa", *Turkish Online Journal of Distance Education*, TOJDE, January, 2006. 7(1), Article 13, 149-154.
- Orazem, P., Glewwe, P. and Patrinos, H., "The benefits and costs of alternative strategies to improve educational outcomes", Iowa State University, *Department of Economics Working Papers Series*, 2007. No: 07028. November.
- Patrinos, H. A. and Psacharopoulos, G., "Education: past, present and future global challenges, World Bank", *Policy Research Working Paper*, 2011. No: 5616, March.
- Psacharopoulos, G. (2000). Building human capital in Europe: issues and methods", OECD *The Appraisal of Investments in Educational Facilities*, European Investment Bank, Paris.
- Psacharopoulos, G., 1977. "Unequal access to education and income distribution". *De Economist*, 125(3), September, 383-392.
- Psacharopoulos, G., and Ying Chu Ng, 1992. "Earnings and education in Latin America: assessing priorities for schooling investment", *World Bank Policy Research Papers*, No: 1056, December.
- Raffo, C., Dyson A., Gunter, H., Hall, D., and Kalambouka, A., 2007. "Education and poverty, a critical review of theory *policy and practice*", Joseph Rowntree Foundation, York.
- Richey (ed.), 1961b. *National Society for the Study of Education*, Chicago.
- Romer, P. M., "Endogenous technological change". *Journal of Political Economy*, 1990. 98(5), Part 2, October, 71-102.
- Schultz, T. W., "Investment in Human Capital". *The American Economic Review*, 1961a. 51(1), 1-17.
- Schultz, T. W., "Education and economic growth, social forces influencing American education", H. G.
- Sianesi, B., and van Reenen, J., "The returns to education: macroeconomics". *Journal of Economic Surveys*, 2003. 17(2), 157-200.
- Stanford, Calif: Standford University Press.
- Tsakloglou, P., and Cholezas, I., "Education and inequality in Greece", 2005. IZA Discussion Paper, No: 1582, May 2005, Germany.