



Munich Personal RePEc Archive

# **Female Income Sensitivity to ODL Degree Awarding Programs: A Case Study in Bangladesh**

Forhad, Md Abdur Rahman and Kamal, Mostafa Azad

Department of Humanities and Social Sciences, Dhaka University of  
Engineering and Technology (DUET), Gazipur, Bangladesh., School  
of Business, Bangladesh Open University, Gazipur-1700.

2013

Online at <https://mpra.ub.uni-muenchen.de/63278/>  
MPRA Paper No. 63278, posted 29 Mar 2015 06:18 UTC

# Female Income Sensitivity to ODL Degree Awarding Programs: A Case Study in Bangladesh

Theme: Girls and Educational Development

**Md. Abdur Rahman Forhad**

Tutor, Bangladesh Open University  
and Assistant Professor of Economics,  
Department of Humanities and Social Sciences,  
Dhaka University of Engineering and Technology (DUET),  
Gazipur, Bangladesh.

**E-mail:** [forhad@duet.ac.bd](mailto:forhad@duet.ac.bd)

&

**Professor Mostafa Azad Kamal**

School of Business,  
Bangladesh Open University,  
Gazipur-1700.

**E-mail:** [mostafa\\_azad@yahoo.com](mailto:mostafa_azad@yahoo.com)

## Abstract

*Bangladesh has been taken tremendous efforts to getting more girls into school following the MDG's, resulting in gender parity in enrollments in primary, secondary and tertiary levels in the past decades. The women contribution to GDP is also significantly increasing during the same period. There are two - a) on campus, and b) distance learning systems; are simultaneously running in Bangladesh. This project will examine female income sensitivity to degree awarding programs in Open and Distance Learning Systems (ODL) offered by Bangladesh Open University (BOU). A survey will be executed on female graduates or learners of BOU as how these programs affect income level considering the other relevant socio-economic factors. Then an econometric model will be performed to explain the income sensitivity to Distance Learning Program in Bangladesh. The study finds income is positively related to the HSC, and BBA degree offered by Bangladesh Open University. This project will also evaluate the effects of social awareness to distance learning system.*

**Keywords:** Female Income sensitivity, MDG's, ODL.

## 1. INTRODUCTION

National income is the aggregation of the income earned by all the individual agents of a country (Campbell & Mankiw, 1991). The determination of a person's income depends on a number of jointly dependent variables and a number of independent variables (Griliches & Mason, 1972). Viscusi (1978) argues that the wealth can be a dependent variable list along with the income for defining the income sensitivity, and it there would be contemporaneous relationships between these two (Feinstein, 1993). (Campbell & Mankiw, 1991) also argue that the skilled human recourses can also be a determinant of income, and it basically depends on education, while variables like parents' education and age would be included as the other independent variables. The residential or on campus and distance learning system are widely used as the methods of proving education.

Distance learning is a learning system where the learner works alone or in a group, following by study materials arranged by the instructor in a location apart from students. In such cases, the students have the opportunity to communicate with an instructor with the help of various media (i.e., text, telephone, audio, video, social media devices etc). Also, distance learning may be executed with the forms of face-to-face meetings. According to the California Distance Learning Project (CDLP),

*"Distance Learning (DL) is an instructional delivery system that connects learners with educational resources. DL provides educational access to learners not enrolled in educational institutions and can augment the learning opportunities of current students. The implementation of DL is a process that uses available resources and will evolve to incorporate emerging technologies."*

Distance learning offers academic education to the learners who are not likely to attend traditional in-campus learning system. It is observed that many adults are unable to or do not wish to attend traditional schools and classrooms as they may have workloads, family obligation which make difficult to be regular in the classes, dearth public transportation system etc. People facing the realities can't afford the traditional classes need alternatives. And distance learning system can be one of the best alternative to those learners, especially the adult learners who are facing the realities severely.

The adults are motivated to continue their education, but limited by circumstances as to how they participate in adult basic education. Flexible learning approaches, differing the classroom oriented system attract to these potential learners significantly.

There is a relationship between income and educational attainment, however it is not guaranteed for getting a suitable job for the graduates earned a higher academic degree. It is claimed that the higher the education level, the higher the income. The employers always prefer an educated and skilled employee so that they will be able to adapt easily with the technological changes in the company. In a survey conducted by Statistical Abstract of the United States (SAUS), it is observed that the employee with higher the education level earn higher income compared to the employee with lower education level. For example, people with professional degrees earned six times as much as people who did not graduate from high school (in 2009: \$128,000 vs. \$20,000). The SAUS also finds that US unemployment rates and educational attainment are also strongly related to each other. It shows that a higher educated the group, the lower the unemployment rate. And the striking trend is consistent over a ten-year period and is highly significant. These figures strongly suggest that the economy with higher educated people earns more than its counterparts. The individual return or payments to an additional year of academic education is positive and significant for all major demographic groups (Duncan & Hoffman, 1982; Heyneman & Loxley, 1983), which really indicates the contributions of education to the growth of a country. High levels of education are associated with such future life outcomes as high income, improved psychological resources and well being, and improved health and survival. And unlike income or occupation, education is usually determined at a relatively young age and persists over the life course, regardless of changes in health or labor force participation; because of this, educational attainment has become a central variable in the understanding of stratified health and mortality outcomes in the United States and elsewhere (Seeman et al., 2008). Increases in the permanent income of the household are always associated with an increase in educational attainment. Parental education generally has a positive and statistically significant effect on the educational attainment of children and mothers education has a stronger effect on both school enrollment and grade attainment of children compared to fathers education.

Bangladesh has been made a significant progress in educational attainments over the past years. The Educational system in Bangladesh is highly subsidized by the Bangladesh government, and other international donor agencies. There have been tremendous changes in educational attainment in Bangladesh in the recent decades, which reect a substantial changes in providing the opportunities for women, who are increasingly delaying childbearing and marriage, and joining the labor force. Bangladesh conforms fully to the Education for All (EFA) objectives, the Millennium Development Goals (MDG) and international declarations; amending her Constitution that all children between the ages of six and eighteen years receive secondary education free of charge.

The female educational enrolment into different level of education in Bangladesh is significantly increasing over past decades. The distance learning system in Bangladesh was launched on 1956. The

Bangladesh Open University (BOU) is the only university, which offers the distance learning programs i.e., secondary (SSC), higher secondary (HSC), undergraduate and graduate levels across the country.

This study will investigate how ODL program is sensitive to the female learners enrolled into different programs in Bangladesh Open University. Following by an introduction, section will brief on Bangladesh Open University, and a literature review. Section 3 explains the methodology and data. The results analysis is available in section 4. And section 5 concludes the study results.

## **2. LITERATURE REVIEW**

Higher educational degree is claimed as a typical prerequisite condition for highly compensated work in an well reputed organization. The level of education ought to be correlated with cumulative income. The increase in education expenditures from a 1 percent increase in income is 1.65 percent (Tolley & Olson, 1971). Griliches and Mason (1972) argue that the education is a dominant variable over some other relevant variables such as ability of a person by a cross-state analysis. Much empirical evidences suggest that education is an important causal determinant of income for individuals within countries. Krueger and Lindahl (2000) find the effect of changes in educational attainment on income growth in cross-country data is at least as great as micro econometric estimates of the rate of return to years of schooling. They also argue that economic growth depends positively on the initial stock of human capital - is shown to result from imposing linearity and constant-coefficient assumptions on the estimates. Education is a significant determinant for reducing the child mortality rates and to increase the income level Das Gupta (1990). They use a terminology trichotomy by considering the sample who have less than a high school diploma, a high school diploma or greater but no college diploma, or a college diploma or greater.

Economic growth is positively related to the starting level of average years of school attainment of adult males at the secondary and higher levels as the workers having educational background would be complementary with new technologies, playing an important role for the diffusion of technology in the development process. Glomm and Ravikumar (2003) examine the evolution of inequality in an overlapping generation's model where each individual's human capital investment depends on quality of schools. They consider an education regime where the quality of schools is a publicly provided input financed by an income tax, and find that the income gap between the rich and the poor may widen even when the quality of public education is the same across all individuals. They conclude that public education may not be the great equalizer as intended by its proponents in the short run, though it is in the long run.

## **3. METHODOLOGY AND DATA**

### **3.1 Methodology**

Women are facing challenges to pursue education at all ages due to lack of sufficient time to attend classes, family and other domestic responsibilities, and socio-cultural practices especially in the developing countries like Bangladesh that the rate of girls' education as less important than boys'. In 35 countries around the world – 18 of them in sub-Saharan Africa, the rest in Asia and the Arab States – girls' net enrollment at secondary level is at least 6 percentage points lower than that of boys (Primo & Khan, 2003). However, the trends are begun to narrow in the recent past, especially in secondary and higher secondary programs.

In a survey conducted by BBC, there is a pay gap between men and women graduating from the same ranked university with the same subjects. The graduates earn thousands of pounds less than their male counterparts. Another survey done by Eurostat finds that the women's gross hourly earnings were on average 16% below those of men in 2011 in the European Union (EU-27) as well as in the euro area (EA-17). Thus, the gender gap can be a determinant of income in Bangladesh.

There is a long debate whether the employee working the private sector are earning more than their counterpart private sectors. It is difficult to make a comparison between these two sectors as there are a number of criteria (i.e., skills, professional status, ages, and organizations) should be considered to do so. Following by the relevant criteria, Mueller (1998) finds that the public sector rent payments in Canada tend to be highest for federal government employees, females, and individuals at the lower tail of the wage distribution. On the other hand, Melly (2005) finds opposite results using different methodology in Germany. Thus, this project aims to check what else in Bangladesh, just simply considering their job

status. The following model can be used to investigate the relationships between the income of the female learners and their academic attainment at BOU and their nature of the job.

$$Y = \alpha_0 + \alpha_1 S + \alpha_2 H + \alpha_3 B + \alpha_4 M + \alpha_5 P + \epsilon_1 \quad (3.1)$$

where  $Y$  means income of the graduate from different programs offered by BOU;  $S = 1$  if SSC completed learners,  $S = 0$  not completing the SSC program;  $H = 1$  if HSC completed learners,  $H = 0$  if not completing the HSC program;  $B = 1$  if BBA or equivalent program completed learners,  $B = 0$  if not completing the BBA program;  $M = 1$  if MBA or equivalent completed learners,  $M = 0$  if not completing the program,  $P = 1$  for government employee, otherwise 0, and  $\epsilon_1$  means error term.

Education helps to become more socially aware, especially about their maternity health, build confidence to run their own business, to be self-reliant who is badly need in the developing countries to boost up the average productivity.

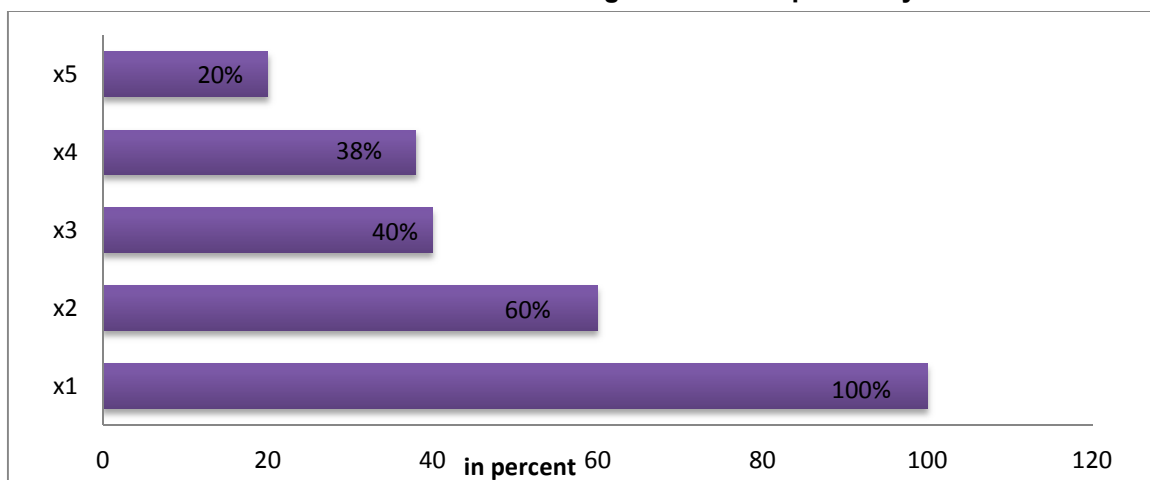
### 3.2 Data

Primary data will be collected from different regional learning centers, Bangladesh Open University; and will be used for the study.

## 4. RESULT ANALYSIS

Education makes people more aware about their basic rights, and helps them to explore their potentialities. An educated person can work confidently; take her decision following by her own judgments. Table 1 shows the thoughts of ODL female learners how ODL program can help them to be self –dependent. Most of these female learners realize that they have a huge opportunity to contribute to their family. They can earn money even working at their own home. Being a Muslim oriented country, some of the female learners could think that they aren't allowed to work outside of their own home. The ODL programs offered by Bangladesh Open University make them aware that they can work at the home to earn money. If they work staying at their home along with their family affairs, then they can use their time in appropriate way. Otherwise, they could waste their valuable time. In such way, most of the ODL learners think that they can contribute to the national economy. Around sixty percent of the ODL learners at BOU start their business by themselves, which indicates the programs definitely motivate them to believe that they are capable to do something for them. Almost of half percent of the learners convey the message to their friends to do so. Finally, the ODL learners are playing very significant role to make a planning in their family-how they lead their life, how they can earn and so on.

**Table 1: ODL Learners' thoughts on self dependency**



**Note:** x1 means making the female learners more confident that they can contribute to the family as well as to the economy, x2 means encourage them to start a business by their own, x3 means Help their neighbor or other female friends to be self-dependent economically, x4 means run their

own business staying at home after the enrolment into ODL programs, x5 means helping their husbands or the family lord to make more earnings.

Table 2 shows the relationships between income of the learners and their ODL programs. The F test statistic shows there are significant relationships between the income and the ODL programs offered by Bangladesh Open University. However, some of the female learners are house wife. The coefficient between SSC programs and female income are negative. Most of the SSC female learners are enrolled into the program, who somehow dropped out from the regular courses (for example, getting married at the early ages) as they may realize they need an academic certificate to maintain their family or social status. They don't want to work in a formal job. They also think that the academic degree may make them more updated about the current world. It may make help them to teach their children and so on. The income sensitivity to HSC and BA or equivalent programs are positively related as most these learners may think that getting a higher degree will help them to earn more money, or to get promotion at a higher position in their service sector. Some of these women may start a business (i.e., boutique) by their own staying at home, which will enhance their earning opportunity. Most of the female in Bangladesh still believe that if women are working outside then, the family affairs would be hampered. If they are working as full time basis, then they may not have available time to take care of their children, family and so on. The relation between income and MA program is negative. The MBA learners don't think that the degree will help them to increase the income. In fact, most of the MBA learners have another MA or equivalent degree. A few very of them might be interested to have another Master (MBA) degree.

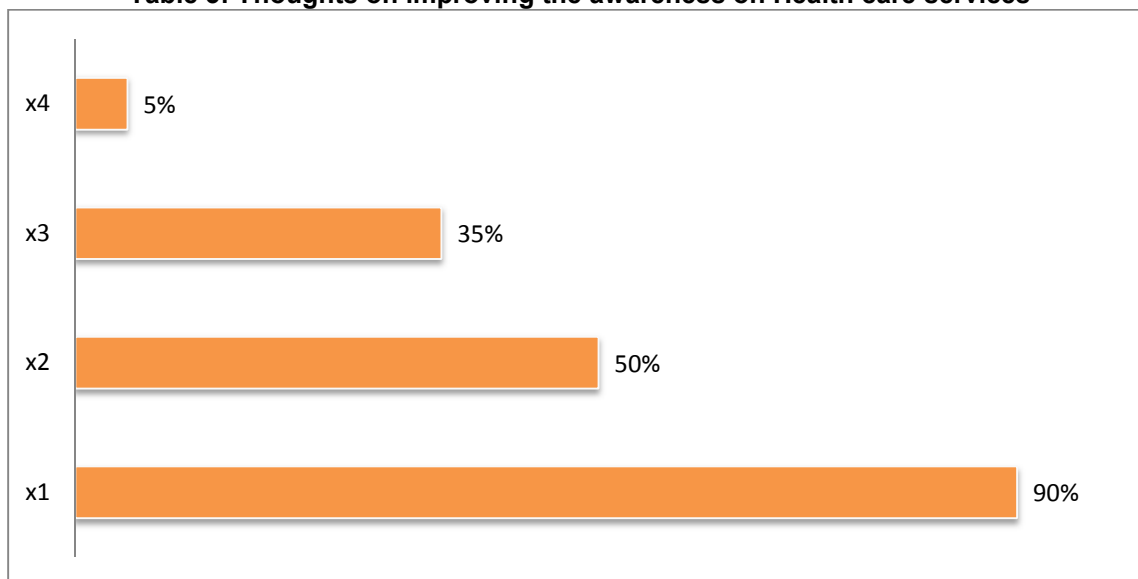
**Table 2: Income sensitivity on different level of programs offered by BOU**

	<b>Coefficients</b>	<b>Std. Error</b>	<b>t-ratio</b>
Constant	9.00000	1.294340	6.9534
SSC	-6.10833	1.447110	-4.2210
HSC	0.117254	0.795366	0.1474
BBA/equivalent	4.000590	0.673134	5.9432
MBA/equivalent	-2.491380	0.543617	-4.5830
<i>F</i> test statistic with <i>df</i> , (5, 150)		16.06969	

Notes: This table shows the income sensitivity to different ODL degree warding program.

Maternal mortality is claimed as a burden for a family. More than 500,000 women dying each year due to pregnancy and childbirth-related complications (Moran et al., 2006). Birth-preparedness and complication readiness is a comprehensive strategy to improve the use of skilled providers at birth, the key intervention to decrease maternal mortality. Birth-preparedness and complication readiness include many elements, including: (a) knowledge of danger signs; (b) plan for where to give birth; (c) plan for a birth attendant; (d) plan for transportation; and (e) plan for saving money. The birth-preparedness and complication readiness may be useful in increasing the use of skilled providers at birth, especially for women with a plan for saving money during pregnancy. The ODL programs especially help the female learners to be more conscious about their health status so that they don't need to spend more money for medical treatment purposes. Thus, they can use these amounts of money for other income generating purposes. Table 3 also shows that MBA program offered by BOU don't play a very significant role to improve the health status than their previous time, or than any other ODL program. The probable reason is that these learners are already acquainted the health awareness in the previous programs.

**Table 3: Thoughts on improving the awareness on Health care services**



**Notes:** x1 means SSC learners, x2 means HSC learners, x3 means Bachelor learners, x4 means Masters' learners.

## 5. CONCLUSION

The study finds a positive relationship between the education attainment of female ODL graduates and their income. The more the female are educated, the more their income is. The findings of the study will motivate other developing countries to encourage female enrollment for having a better economic life of the female and thereby higher economic growth as a whole. In the cases of the developing/under developing countries, it is observed that the female literacy rate is lower than the male literacy rates as these countries could have a lower income level, or family burdens or other socio-economic barriers. The people of these countries also have a belief that female can't contribute to their family. The findings of this study will convey a message to those people in the developing countries that female can contribute to their family as well as their country if they can have education. Therefore, the policy makers should undertake policies to encourage the female dropouts to return back to education, which will raise their income level, make them more aware and reduce their family troubles. ODL can be the best means of augmenting the female education in the developing nations in particular.

## References

- Campbell, J. Y., & Mankiw, N. G. (1991). The response of consumption to income: a cross-country investigation. *European economic review*, 35(4), 723-756.
- Das Gupta, M. (1990). Death clustering, mothers' education and the determinants of child mortality in rural Punjab, India. *Population studies*, 44(3), 489-505.
- Duncan, G. J., & Hoffman, S. D. (1982). The incidence and wage effects of overeducation. *Economics of Education Review*, 1(1), 75-86.
- Feinstein, J. S. (1993). The relationship between socioeconomic status and health: a review of the literature. *The Milbank Quarterly*, 279-322.
- Glomm, G., & Ravikumar, B. (2003). Public education and income inequality. *European Journal of Political Economy*, 19(2), 289-300.
- Griliches, Z., & Mason, W. M. (1972). Education, income, and ability. *The Journal of Political Economy*, 80(3), S74-S103.
- Heyneman, S. P., & Loxley, W. A. (1983). The effect of primary-school quality on academic achievement across twenty-nine high-and low-income countries. *American Journal of sociology*, 1162-1194.

- Krueger, A. B., & Lindahl, M. (2000). Education for growth: why and for whom? : National Bureau of Economic Research.
- Melly, B. (2005). Public-private sector wage differentials in Germany: Evidence from quantile regression. *Empirical Economics*, 30(2), 505-520.
- Moran, A. C., Sangli, G., Dineen, R., Rawlins, B., Yaméogo, M., & Baya, B. (2006). Birth-preparedness for maternal health: findings from Koupéla district, Burkina Faso. *Journal of health, population, and nutrition*, 24(4), 489.
- Mueller, R. E. (1998). Public-private sector wage differentials in Canada: evidence from quantile regressions. *Economics Letters*, 60(2), 229-235.
- Primo, N., & Khan, A. W. (2003). *Gender issues in the information society*: UNESCO Paris.
- Seeman, T., Merkin, S. S., Crimmins, E., Koretz, B., Charette, S., & Karlamangla, A. (2008). Education, income and ethnic differences in cumulative biological risk profiles in a national sample of US adults: NHANES III (1988–1994). *Social science & medicine*, 66(1), 72-87.
- Tolley, G. S., & Olson, E. (1971). The interdependence between income and education. *The Journal of Political Economy*, 460-480.
- Viscusi, W. K. (1978). Wealth effects and earnings premiums for job hazards. *The review of economics and statistics*, 60(3), 408-416.