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Survey on Rate of Return on Investment in Education

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Abstract

The rate of return to education is the sum of discounted benefits and costs. It shows the relatively profitable sector for a secure investment. The main objective of this study is to review and analyze the volume of the rate of return to education. The literature review, survey design was used, and the materials were collected using purposive sampling. The analysis concludes that the rate of return on education can be analyzed based on the additional year of schooling, sex, levels of education, occupations, geographical regions, countries, and sectors. Different studies conducted in different countries reveal that the size of the rate of return differs according to the categories mentioned above. It means that overall returns to education seem highly heterogeneous. Likewise, most studies show that the private rate of returns for females is higher than that of males; the tertiary level's returns are higher than the other levels, and the urban sector's returns are higher than that of the rural sector.

Keywords: *Rate of returns - education – private - social - heterogeneous - survey*

Introduction

The rate of returns to education is the rate of discount, which equates the sum of the discounted value of benefits to the sum of the discounted value of costs (Mitra, 2019). The rate of return provides the investment direction whether to more or less, but it cannot tell how much more or less. For answering more or less, other analysis like cost-benefit should be done(Blaug, 1972). It provides measures of relative profitability and meaningful comparison with estimates of the yield of alternative investment forms (Woodhall, 2004).The returns to education can be measured both in terms of economic (monetary term) and non-economic (non-monetary term), and further, private (individual's earnings) and social (government and institution's earnings) (Barr, 1998). Economic and non-economic returns to education can be estimated from employees' wages, and externalities and spillover effects of education, respectively. Similarly, the private rate of return measures the relationship between after-tax earnings differentials and costs (Woodhall, 1992). Likewise, it compares personal costs with benefits and is calculated by finding the rate of discount (r) that equalizes the stream of discounted benefits to the stream of costs at a given point in time. Therefore, it is used to explain the personal income structure derived from different levels and types of education (Psacharopoulos & Patrions, 2004). Private rate of return to education encourages an individual to invest in education after compulsory education (OECD, 2017). The social rate of return measures the relationship between the before-tax lifetime earnings

differentials and social costs (Woodhall, 1992). Likewise, the social rate of return compares the social costs (the government and other institutions' investment) and social benefits (tax earnings and other externalities of education) of education in the country. In addition, it is also used to formulate educational policies (Hough, 1993; Psacharopoulos & Patrions, 2004).

The cost of education is an essential part of estimating the rate of return for education. This cost is the educational expenditure incurred to obtain an educational degree. Likewise, it is incurred by individuals, the government, and various other institutions. The cost of education can be estimated as direct cost (monetary value), expended by the pupils or their parents and the government, and indirect cost (opportunity cost), which is earnings foregone sacrificed by pupils and the government. Therefore, analysis of the cost of education is considered useful for salary earners, individuals investing in education, and educational planners (Woodhall, 1992). Thus, the direct cost can be measured by purchasing teachers' labor, school buildings, equipment, or other goods and services. However, these inputs have alternative uses (Khandagale & Pandya, 2014). Likewise, the indirect cost of education is measured by what a student, an educational institution, or the public has to give up to educate an individual or a group of people(Babalola, 1995).The cost of education has been categorized in different ways. Some scholars classify it in terms of cost of personnel, facilities, materials and tools, program costs, and other input costs (Lewin & McEwan, 2001).But, some scholars classify it in terms of direct, indirect, and opportunity costs. However, major economists present it into various type like variable, current, recurring, fixed, capital, non-recurring, sunk, money, incremental, total, average/unit, marginal, institutional, social, private, direct, indirect, opportunity costs *(Aghenta, 1993; Akpotu, 2008; Asep, Tjutju, & Sumarto, 2016; Asian Development Bank, 2013; Babalola, 1995; Caillods, 2011; Cheslock, Ortagus, Umbricht, & Wymore, 2016; Coleman, 2010; Coombs & Hallak, 1972; Frank & Bernanke, 2009; Greenlaw & Shapiro, 2011; Levin, 1995; Lewin & McEwan, 2003; Majumdar, 1984; Mcafee, Mialon, & Mialon, 2007; Noch & Kusto, 2018; Poteliene & Tamasauskiene, 2016; George Psacharopoulos & Woodhall, 1995; Sartori et al., 2014; Tilak, 1985; Tsang, 1995; Woodhall, 1992).*There are several approaches and models of educational costs evaluation. On the basis of literature, it seen that Finance Analysis Model (FAM), Cost Modeling Approach (CMA) and Resource Cost Model (RCM) are mostly used to analyze the costs of education(Institute of Education Sciences, 2020; Levin & McEwan, 2002; McEwan, 2012; Parrish & Chambers, 1996; US Department of Education, 1999, 2003).

The benefit of education is the next part of the rate of returns to education. It refers to the returns to education like wages of workers. The benefits of education can be measured in terms of money. The level of education is positively related to the level of income. Those who get an education have higher incomes or wages or salaries, have more life opportunities, and tend to be healthier. Higher educated societies or people involve in lower crime, make better health, and participate civic activities(University of the People, 2021). These activities of the societies or people are the indirect benefits of education. Alfred Marshall (1890) has mentioned the concept of benefits as "Education provides the long-term effects in the society, like, the higher wages, the better education and medical facilities cause lower infant mortality" (p. 165). A wide range of private and public benefits emanate from higher education. These benefits can be divided into four categories based on the type of benefit derived and the primary beneficiary. They are

private economic, public economic, private social and public social benefits(Institute for Higher Education Policy, 1998).

Private benefits of education are the form of additional income obtained during the life of the person who invested on education (Moroşan & Sava, 2010).Private benefits are classified as direct and indirect benefits. The direct private benefit is the monetary benefits like current, future and lifetime income(European Commission, 2014; Institute for Higher Education Policy, 1998; Leslie & Brinkman, 1988). Likewise, the indirect private benefits are the non-monetary benefits like career prospects, job security, job adequacy and others. These benefits also provide the non-material benefits like sound health, quality of life, social and cultural participation, personal well-being, life expectancy, chances of marriage, honorary activity and others. However, such benefits are difficult to quantify (Becker, 1975; Hansen & Weisbrod, 1969; Heise & Meyer, 2004; Herndon, 2008; Lochner & Moretti, 2004; Williams & Swail, 2005). The private benefits of education is the difference between average earnings of a higher level of education and lower level of education, earned over their average life expectancy, and but, have to remove the influences of other factors on earnings besides education using specific statistical tools (Moroşan & Sava, 2010).

The social benefits can be analyzed as direct and indirect benefits. The direct benefit is the monetary income of the government, society, or institutions, and this benefit can be measured in terms of money. Likewise, indirect social benefits are the externalities and spill-over of education that represent the impact of education on social development. Similarly, externalities/spill-over benefits are the contributions to democracy, human rights, political stability, less crime, less poverty, environmental benefits, the adaptation of technology, and others that are difficult to quantify (McMahon, 2004, 2009, 2010, 2017). Several measurements of benefits of education are developed like lifetime earnings, age earnings profiles, time value of money, and others. These measurement instruments have to use to calculate the rate of returns to education (Britton, Dearden, Erve, & Waltmann, 2020). Likewise, the complete, earning function and short-cut methods are also popular *(Adrian, Raluca, & Claudia, 2010; Stark, 2007).*

The rate of returns shows the outcomes of education and helps to conduct the cost-benefit analysis and evaluate educational projects and programs. However, this technique has not generally been used in evaluating educational programs in the case of Nepal. This context raised the curiosity that what is the situation of the rate of returns to education in the current world? Based on the question, this study has just tried to review and analyze the pattern of the rate of returns to education in the contemporary world. Likewise, it is hoped that this study will provide knowledge about the country-wise rate of returns to education.

Method

In order to collect the data of rate of returns to education, the literature survey research designed has been used. This design is useful to develop long-range planning for a further study (Gothberg, 1990). It is a systematic collection of data concerning a system, and its main purpose is to collect, organize and disseminate the information (Singh, 1998). In the process of reviewing the literature, researcher selects, reads and writes the related text and submits to the supervisor,

and then he concise and lucid the text (Mcmenamin, 2006). All these processes and norms have entirely been followed in this research. Essential data were collected using the purposive sampling technique. Reliable and authentic research based articles, research based reports, and PhD dissertation were used as a literature from e-library as well as physical library, and grey literatures were not comprised. The NepJOL, HINARY, JSTOR, ProQuest, Academia and World Bank's library were mainly accessed as the databases and e-libraries. Likewise, others databases and e-libraries were also accessed such as ACADEMIA, NDLI, Research Gate, ELSEVIER, and Google scholars and search engine.

In order to collect the data of rate of returns to education, major eight key search terms like "additional year of schooling", "private and social rate of returns", "level-wise rate of returns", "sex-wise rate of returns", "sector, region and country-wise rate of returns", "occupation-wise rate of returns", "method-wise rate of returns", and "costs, wages and rate of returns" were used. Searching process was as "content I can access" in access type, "articles, books and research reports" in academic contents, "no boundary" in publication date, "economics" in subject area, and "relevance" in short by, in order to search the text. The required materials were selected on the basis of quantitative analysis of costs and benefits criteria. Based on this selection criteria, 35 research based articles, 12 research based reports, and 4 PhD dissertation were collected, and in the end, in totality only 25 were reviewed because those were fully within the selection criteria. These documents have been included since 2010 to 2020. The collected data have been presented in table and figures. The objective of the study is to review current situation of the rate of returns to education in the current world, therefore, theoretical, methodological and policy aspects have not been included in the study.

Result

In this research, the empirical data about the rate of returns to education have been presented on different themes like additional year of schooling, private and social rate of returns, level-wise rate of returns, sex-wise rate of returns, sector, region and country-wise rate of returns, occupation-wise rate of returns, method-wise rate of returns, and costs, wages and rate of returns. Such type of data have only been reviewed during the period of 2010 to 2021 AD and presented as follows. According to different studies conducted at different times, the overall rate of returns to an additional year of schooling are differed. These data are shown in Table 1.

Table 1

Overall rate of returns to an additional year of schooling (In %).

Researchers	**Year**	**Country**	**Schooling**	**Higher level**
Tushar Agrawal	2011	India	8.5	-
Carnoy, Loyalka, Androushchak, & Proudnikova	2013	BRIC countries	12.1	-
Montenegro and Patrinos	2014	139 countries	9.7	-
Tangtipongkul	2015	Thailand	12.6	-
Poteliene and Tamasauskiene	2016	Lithuania	11.2	-
Patrinos	2016	139 Countries	9.7	-

Psacharopoulos and Patrinos	2018	139 Countries	8.8	-
Rizk	2019	MENA region	8.5	-
Guo, Huang, and Zhang	2019	China	10.0	-
Agiomirgianakis, Lianos, and Tsounis	2019	Greece	-	14.4
Hoque, King, Montenegro, and Orazem	2020	111 Countries	11.8	-
Sargsyan	2020	Armenia	7.0	-
Mohammad and Kazuo	2020	Bangladesh	5.4	-

Source: (Agiomirgianakis, Lianos, & Tsounis, 2019; Agrawal, 2011; Carnoy, Loyalka, Androushchak, & Proudnikova, 2013; Guo, Huang, & Zhang, 2019; Hoque, King, Montenegro, & Orazem, 2020; Mohammad & Kazuo, 2020; Montenegro & Patrinos, 2014; Patrinos, 2016; Poteliene & Tamasauskiene, 2016; George Psacharopoulos & Patrinos, 2018a; George Psacharopoulos & Patrinos, 2018b; Rizk, 2019; Sargsyan, 2020; Tangtipongkul, 2015).

Note: MENA = Middle East & North Africa region's countries, BRIC countries (Brazil, Russia, India & China).

The rate of returns to education has been analyzed on the basis of different levels of education such as primary level, secondary level and higher level. In the present study, higher levels of education are defined as lower graduate (bachelor's degree) and higher graduate (master's degree). According to several studies, the rate of returns to education varies in different regions and countries. Similarly, in addition, it can also be said that the higher the education, the higher the rate of returns and the lower the education, the lower the rate of returns. However, some studies have shown that the rate of returns at the secondary level is lower than the primary and higher levels of education. These facts are collected from 12 researches representing 9 different countries including China, India, Turkey, Mexico, Malaysia, Chile, Australia, Armenia and Bangladesh. One study was carried out collecting data from 139 countries. The data are shown in Table 2.

Table 2

Level-wise rate of returns to education (In %).

Researchers	Year	Country	Level of Education		
			PL	SL	HL
Fan, Meng, Wei, and Zhao	2010	China	-	-	7.1-18*
Agrawal	2011	India	5.85	11.8	15.90
Tansel and Bircan	2011	Turkey	6.80	7.10	11.10
Harberger and Guillermo-Peón	2012	Mexico	5.00	7.45	15.30
Arshad and Ghani	2015	Malaysia	6.10	10.7	11.50
González-Velosa, Rucci, Sarzosa, and Urzúa	2015	Chile	-	-	12.00
Patrinos	2016	139 Countries	13.0	-	22.0
Chen	2020	China	9.45	9.97	11.08
Lewis and Lee	2020	Australia	7.00	5.00	13.00
Sargsyan	2020	Armenia	-	-	17.00
Mohammad and Kazuo	2020	Bangladesh	3.2	10.9	15.90
Mamun, Taylor, Nghiem, Rahman, and Khanam	2021	Bangladesh	5.42	4.86	12.00

Source: (Agrawal, 2011; Arshad & Ghani, 2015; Chen, 2020; Fan, Meng, Wei, & Zhao, 2010; González-Velosa, Rucci, Sarzosa, & Urzúa, 2015; Harberger & Guillermo-Peón, 2012; Lewis & Lee, 2020; Mamun, Taylor, Nghiem, Rahman, & Khanam, 2021; Mohammad & Kazuo, 2020; Patrinos, 2016; Sargsyan, 2020; Tansel & Bircan, 2011).

* *For philosophy and history, economics, law, pedagogy, literature, science, agriculture, medicine, military science, management and arts, the rate of returns are 7.1 percent, 11.8 percent, 17.2 percent, 1.8 percent, 10.1 percent, 7.1 percent, 18 percent, 3.9 percent, 8.8 percent, 16 percent, 14.8 percent and 15 percent respectively.*

The rate of returns to education can be analyzed in terms of private and social returns. According to several studies,in higher levels of education, the private rate of returns is higher than the social rate, however, in school levels of education it is in the opposite direction as compared to higher education. Likewise, the private and social rate of returns to education varies in different regions and countries. Similarly, there is variation in the rate of returns to education for the males and the females. The rate of returns to education for female is generally high than the male (Fan et al., 2010), (Fulford, 2012), (Qureshi, 2012), (Harberger & Guillermo-Peón, 2012), (Harberger & Guillermo-Peón, 2012), (Romele, 2013)(Carnoy et al., 2013), (Sinning, 2014), (Montenegro & Patrinos, 2014), (Cegolon, 2014), (Tangtipongkul, 2015), (Arshad & Ghani, 2015), (George Psacharopoulos & Patrinos, 2018b), (Lewis & Lee, 2020), and (Melianova, Parandekar, Patrinos, & Volgin, 2020).

The private and social rate of returns to education have been collected from the different countries' researches such as Greece, BRIC countries, Mexico, Russian Federation, Spain, Azerbaijan, Lithuania, and Latvia. Likewise, Montenegro and Patrinos (2014), and Patrinos (2016) have found the global average private rate of returns to additional year of schooling, in addition, Poteliene and Tamasauskiene (2016) have also estimated the private rate of returns corresponds to the EU21 average rate pointed out by OECD countries. Patrinos (2016) has found the global average private rate of return to a year of schooling. George Psacharopoulos and Patrinos (2018b) have found the global average private rate of return to extra year of schooling. The collected data are presented in Table 3.

Table 3

Sex-wise private and social rate of returns to education (In %).

Researchers	Year	Country	Private		Social	
			Male	Female	Male	Female
Harberger and Guillermo-Peón	2012	Mexico	9.8 (SL)		-	-
Carnoy et al.	2013	Brazil	-	-	18.4 (HL)	16.3 (HL)
Montenegro and Patrinos	2014	Global average	9.6 (SL)	11.7 (SL)	-	-
Patrinos	2016	Global average	9.1 (SL)	11.5 (SL)	-	-
Poteliene and Tamasauskiene	2016	EU average	11.2 (SL)	-	-	-
Psacharopoulos and Patrinos	2018	Global average	9.0 (SL)	-	-	-
Psacharopoulos and Patrinos	2018	Bangladesh	10.6(SL)	-	-	-
Psacharopoulos and Patrinos	2018	India	10.8 (SL)	-	-	-
Psacharopoulos and Patrinos	2018	Maldives	8.1 (SL)	-	-	-
Psacharopoulos and Patrinos	2018	Nepal	7.9 (SL)	-	-	-
Psacharopoulos and Patrinos	2018	Pakistan	6.2 (SL)	-	-	-
Psacharopoulos and Patrinos	2018	Sri Lank	8.9 (SL)	-	-	-
Agiomirgianakis et al.	2019	Greece	14.1 (HL)	-	-	-
Melianova et al.	2020	Russian Federation	11.0	-	-	-
Moreno and Patrinos	2020	Azerbaijan	-	-	15.6 (HL)	

Source: (Agiomirgianakis et al., 2019; Carnoy et al., 2013; Harberger & Guillermo-Peón, 2012; Melianova et al., 2020; Montenegro & Patrinos, 2014; Moreno & Patrinos, 2020; Patrinos, 2016; Poteliene & Tamasauskiene, 2016; George Psacharopoulos & Patrinos, 2018b).

Note: SL = School level of education and HL = Higher level of education.

The rate of returns to education can be measured in terms of urban and rural area. The literature have shown that the returns to education for urban area is generally high than rural area. Peet, Fink, and Fawzib (2015) have found urban rate of returns is higher than the rural by 1.0 percent in 25 developing countries. Other data for urban and rural rate of returns to education have been collected from the different countries' researches. The rate of returns to education can be further analyzed based on the occupations and methods. Likewise, this returns can also be shown based on the costs and wages of employees.

Discussion

In the study, the rate of returns to education is incorporated into twelve sub-themes like additional year of schooling, private rate of returns, social rate of returns, level-wise rate of returns, discipline-wiserate of returns, sex-wise rate of returns, sector-wise rate of returns, region-wise rate of returns, country-wise rate of returns, occupation-wise rate of returns, estimation method-wise rate of return sand costs, wages and rate of returns. Similarly, an attempt has been made to maintain the chronological order in the presentation of the reviewed text, however, in some cases, the chronological order has not been completely followed to maintain the sequence of text.

It can be concluded that the average overall additional year of schooling differs according to countries, sex, occupations, sectors, regions, etc. Montenegro and Patrinos (2014) have stated average value of 139 countries which is 9.7 percent, and they further mentioned that the highest is in Sub-Saharan Africa by 12.4 percent and the lowest is in the Middle East and North Africa 7.3 percent and 6.5 percent respectively, and the value for South Asia is 7.7 percent. Patrinos (2016) has also studied again in 1916 collecting the data from the 139 countries, and found the average value by 9.7 percent, and the highest is in Sub-Saharan Africa by 12.5 percent. In the context of South Asia, he mentioned 7.2 percent. Likewise, George Psacharopoulos and Patrinos (2018b) have also studied in 139 countries and found that the average rate of returns to an additional year of schooling is 8.8 percent. It is also seen that the rate of returns to additional year of education and average returns both are higher in higher education than lower level of education.

The majority of the literature have shown that the rate of returns to education will increase with educational levels both for the male and the females, but in different rate for the male and the female. In this context, Qureshi (2012) has said that the rate of returns to education increases with increase in educational levels both for the females and the males, and the incremental increase for the female is much more than the males. Montenegro and Patrinos (2014) have found the global average private rate of returns to additional year of schooling is 10 percent, this data for male is 9.6 percent, and for females is 11.7 percent. However, Patrinos (2016) has found the global average private rate of return to a year of schooling is 9.7 percent, this data for male is 9.1 percent, and for female is 11.5 percent.

However, the rate of returns for work experience is significantly positive. Tangtipongkul (2015) has said that the rate of returns to schooling for work experience are significantly positive, but at a decreasing rate. He has further said that the private and social returns on vocational education attainment are greater than on general education. Another important part of rate of returns to education is the private and social. In this case, the private rate of returns to education is higher than social returns in higher education, however, it cannot be seen in the school level like primary and secondary level. It means that private rate of returns is lower than the social returns in school level. Romele (2013) has said that the private rate of returns is relatively higher than the social rate of returns in higher education based on the study of new EU member states and developing countries.

Agiomirgianakis et al. (2019) have presented the private rate of returns to higher education. They have compared this value in between Open University and Traditional University. The average

private rage of returns to secondary and higher education for Open University's graduates are 38.6 percent and 52.9 percent, and for Traditional University's graduates are 7.3 percent and 14.1 percent respectively. Likewise, according to them, this rate of returns for Open University is four time higher than the Traditional University for the first degree graduates and about double for the master degree graduates. According to the study conducted by Melianova et al. (2020) in the Russian Federation,the private rate of returns to higher education is three times greater than the vocational secondary education, and it is just below the EU average and the global average. Similarly, George Psacharopoulos and Patrinos (2018b) have found the global average private rate of return to extra year of schooling is 9.0 percent. Likewise, they have stated this value for South Asian countries like Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lank are 10.6 percent, 10.8 percent, 8.1 percent, 7.9 percent, 6.2 percent, and 8.9 percent respectively. In the context of social rate of returns to education, it is seen that few researches have been done. Carnoy et al. (2013) have revealed the direct social rate of return to higher education in Brazil are 18.4 percent for the males and 16.3 percent for the females. Likewise, Moreno and Patrinos (2020) have estimated the social rate of return to higher education, and they have found that this value is 15.6 percent in Azerbaijan.

Fan et al. (2010) have stated that in the case of engineering discipline, the females' rate of returns to education is higher than the males in China. Similarly, Fulford (2012)has conducted a research on returns to education in India. He has estimated the rate of returns to education for different disciplines and level of education. He concluded that the rate of returns to education for the females is 5.0 percent to 8.0 percent and likewise, the males' rate of returns to education is 4.0 percent to 6.0 percent in India. This research has showed that the pooling all cohorts in a survey year and including age indicators, this value for the female is 6.0 percent and for the male is 5.0 percent. Qureshi (2012) has studied regarding the gender differences in school enrolment and returns to education in Pakistan. He says that the rate of returns to schooling for the females is higher than the males at all levels of education and yet parents still invest less in educational development of the females as compared to the males. Harberger and Guillermo-Peón (2012)in Mexico, Romele (2013)in Latvia, Cegolon (2014)in 21 countries, Mohammad and Kazuo (2020) in Bangladesh and other researchers have studied and found the females' high rate of returns than the male.

However, it is not necessary that the female's rate of returns to education is higher than the male. Because Cegolon (2014)has said that the female's rate of returns to education is higher than male in 17 of 21 developed countries. Poteliene and Tamasauskiene (2016)have studied regarding the rate of return to education in Lithuania and compared with EU countries. They have found that the average rate of returns to education for the male is higher than the female in these countries. This value for the male is 14.9 percent and for the female is 12.5 percent. However, this rate for the female is higher only in Greece, Belgium, Portugal, Norway, and Spain, and no different in Denmark. Ferreyra, Avitabile, Botero Álvarez, Haimovich Paz, and Urzúa (2017) have rate of return to higher education in Latin Americaand the Caribbean. They have stated that in 11 out of 18 countries, the males' private rate of returns to higher education is higher than the females, and however, in other 7 countries, this value is higher for females than males. Likewise, Rizk (2019) has studied regarding the rate of returns to education in Middle East and North Africa(MENA)

region's countries. He states that the rate of returns to education for the females is more than the males by 2.0 percent. However, this rate is revealed in Egypt, and in the context of Palestine the females' return is equal the males' return. Likewise, Hoque et al. (2020) have revealed the male's rate of returns to education is higher than the female in China. They have presented the rate of returns for the male is 10.6 percent and for the female is 7.6 percent.

The rate of returns to education can be measured in terms of urban and rural area. The returns to education for urban area is generally high than rural area. Peet et al. (2015) have found urban rate of returns is higher than the rural by 1.0 percent in 25 developing countries. According to Guo et al. (2019), this value is 8.4 percent for urban and 6.4 percent for rural in China. Likewise, Hoque et al. (2020) have found this value for the urban is 9.5 percent and for the rural is 8.8 percent. Likewise, Poteliene and Tamasauskiene (2016) have found that the private rate of returns in Lithuania is similar to in Spain (11.2 percent). However, this rate is higher than neighboring countries like Poland and Estonia by 0.2 times. Comparing with European countries, this rate of Lithuania is two times higher than in Sweden, Norway, Netherlands, Italy, and United Kingdom. Although, the rate of Hungary, Poland, and Slovakia are higher than Lithuania by 1.6 times.

Likewise, Ferreyra et al. (2017) have studied in 18 countries of Latin America and the Caribbean. They have found that the average regional gender gap is 15 percent. The largest differences in favor of males have been emerged in Argentina, Chile, Mexico, and Guatemala, while the Dominican Republic, República Bolivariana de Venezuela, Ecuador, and Panama. The rate of returns to education varies in between developed countries (advanced economies) and developing countries. Romele (2013) has studied in Latvia, and compared among the EU member's countries. He has pointed out that the average rate of returns to education for developing countries is 10.0 percent, and this rate for other developed countries like Czech Republic is 17.6 percent, Hungary is 20.0 percent,Poland is 21.4 percent, Portugal is 18.5 percent, Slovenia is 19.1 percent, and Turkey is 19.3 percent. Likewise, Cegolon (2014)has researched in 21 developed countries. The researcher has stated the 24 years average rate of returns to an additional year of schooling for these countries is 6.0 percent.

The rate of returns to education varies according to occupation sector for the equally educated and qualified employees also. Generally, it can be seen that the rate of returns to education for public sector is higher than the private sector. The research finding of UNICEF (2017) states that the public sector rate of returns to education is higher than the private sector by 3.8 percent. Likewise, this value for the equally qualified male employees in public sector is 5.1 percent and in the private sector is only 1.2 percent in Iraq. In addition, in the case of the females, this value in the public sector is 7.6 percent and in the private sector is 5.2 percent. There is gaped of 2.5 percent. Likewise, the Iraqi females in the private sector (7.2 percent) have earned higher hourly wages than the public sector (6.9 percent) by 0.3 percent. Similarly, Sargsyan (2020) has said that the rate of returns to education of the public sectors' employees is higher than the private sectors' employees in the case of Armenia. He further mentions that this rate for public sectors' employees is 8.97 percent, and for private sectors' employees is only 5.84 percent. In addition, this rate for professional occupation is 10.2 percent, and for non-professional occupation is 3.2 percent. It is seen that there is a vast difference between these two professions by 3.18 times.

Bairagya (2020) has stated that the average rate of returns to education for self-employed is 5.7 percent in India.

Conclusions

On the basis of above discussion, it is concluded that the rate of returns to education can be analyzed in terms of additional year of schooling, sex, levels of education, occupations, geographical regions, countries, and others. Similarly, based on the literature it is observed that in the overall size of the rate of returns to education varies greatly. In most countries, it is observed that the rate of return to education for the female is higher than that of males. Similarly, the rate of return to education for the tertiary level is higher than for the higher level. On the other hand, the rate of return to education at the secondary level is lower than for the tertiary and higher levels. Looking at the same data in rural and urban areas, it is found that the rate of return to education for the urban is higher than in the rural area.

In this context, Rizk (2019) states that the rate of returns varies across countries due to differences in the quality of education and the supply and demand of graduates, which significantly impact returns of school education. In addition, it can be said that the returns to education are more concentrated around their respective means than previous thought. In mean that there is a decreasing pattern of returns to education over time. Similarly, the female's rate of returns to education doesn't need to be higher than the male. However, because Cegolon (2014), Poteliene and Tamasauskiene (2016), and Ferreyra et al. (2017) have revealed, the males' private rate of returns to education is higher than that of the females. Likewise, the study conducted by Rizk (2019) in the Middle East and North Africa (MENA) region, and the study conducted by Hoque et al. (2020) in China, it is revealed that the males' rate of returns to education is higher than that of female. They have presented the rate of returns for the male is 10.6 percent, and for the female, it is 7.6 percent.

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