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Abstract

This study has highlighted a formula for calculating investment in Early Childhood Education (ECE) which involved two government kindergartens and two private kindergartens. The purpose of this study is to provide in-depth information on the investments made by the government and private sector in order to generate first-class human capital as early as the birth age. This is because every investment that has been made should be positive in returns on investment to generate the country's economy.

Keywords: Investment, Early Childhood Education, kindergartens, human capital, economy

Introduction

According to a study conducted by Daelmans, Darmstadt, Lombardi, Black, Britto, Lye and Richter (2017), the long-term impact on middle-income countries is able to increase cognitive skills or acceptance of knowledge by reasoning and thinking through senses. If this is not addressed, other effects will also occur as well as health problems in adulthood. However, the short-term effects are more focusing on the growth of children as early as the first two years. Therefore, investment in education should be emphasized in the interest of producing more quality human capital in the future.

Owing to that, education is broad-based that covers many aspects of life. In line with the opinion of Azrin (2011), he stated that the education system acts as an important foundation in the development of society in tandem with the needs of the country. In addition, the development of a society can be described or measured by the level of education that has been successfully acquired. It is clear that education is a reflection on the personality of a society. If society's character is high and of quality, then it is clear that the success of the education system has been smooth.

According to Ahmad (2014), education has made a huge impact on human life in order to achieve the quality of life. In fact, education is the key element in improving the quality of life which is capable to

overcome poverty and form a more harmonious generation. In addition, education is also dynamic or keeps changing through a lot of researches that have been done. Elements of change are needed in the pursuit of progress in relation to rapid education development that is in line with the will of the state to make the younger generation to be more literate. Additionally, education also strives to prove the capability of an individual to care for life with a better quality. Nevertheless, economic and social aspects also contribute to the element of education.

Furthermore, Zain, Mohamad and Hussin (2014) stated that education also serves as a stepping-stone for economic growth and success in a country. This means that an increase in education is able to produce first-class human capital with more knowledge and talents to realize the dream of the nation.

Early Childhood Education (ECE)

According to Khairul (2015), it has been reported that ECE is an early education that begins in childhood. In other words, early childhood has a mean period of time from the start of the birth until the age of eight years. Meanwhile, ECE can be defined as an informal program capable of providing a special learning experience for children aged four to six years before entering the school environment.

Garber and Heber (1983) emphasized that ECE also has a positive impact on children's cognitive intelligence and development compared to those who do not have the opportunity to participate in the ECE program. In this case, child intelligence is measured based on IQ (Intelligence Quotient) tests conducted before and after they participate in the program. Hence, the importance of the ECE program should be highlighted to children who are in urgent need of education for IQ enhancement.

This is agreed by Zakaria, Rusli, Kamarulzaman, Ahmad and Ismail (2010) that the ECE curriculum was formulated in order to ensure knowledge, skills, norms, values, cultural elements and beliefs can help the development of children covering physical, spiritual, mental and emotional aspects. It means education not only acts as an agent of knowledge, but it is also the key element in the child's personalities. Thus, it is clear that education should start from the beginning of birth in producing a balanced first-class human capital in many aspects.

Hence, the age of children and adolescents is a boundary in economic research relating to the production of human capital. It is an important stage of human capital expenditure. However, different development models result from the idea of economists concerned with the effects of preschool investment. The findings still focus on children's readiness in schooling and cognitive improvement as well as children's emotional societies. Thus, it is clear that the age of children and adolescents is the golden age in investing in human capital who will lead the nation in the future (Magnuson & Duncan, 2016).

Nevertheless, Heckman (2012) reported that high rate of returns begins from investing in education as early as childhood starting from the beginning of the birth to the age of five. If the investment starts from three or four years old, it is especially late to the less fortunate children. This is because

the potential or ability of a child can be tracked as early as four years of age. At such age, the curiosity on something is higher and extraordinary with their keen to try new things.

Investment Issues in Early Childhood Education

Investment in education requires intervention in many aspects besides education aspect, for example health, nutrition, and protection aspects, in order to increase the favorable returns in the ECE to produce quality first-class human capital. The intervention can also reduce poverty, family problems and discrimination. Parents also receive various facilities such as parents being paid leave, a breastfeeding place at work and free pre-schools which can reduce their economic burden. Hence, it encourages family development. Owing to that, the cost for the care and development of a child is equivalent to USD 0.50 per year. This clearly proves that other aspects besides education are importantly contributing to the development of ECE (Daelmans et al., 2017).

Investment in education ranges from pre-school level to the highest level of education is capable of improving one's quality of life (Ahmad, 2014). Investment in education aims to get fair returns as well as generate first-class human capital and future leaders. It further ensures improvement in profitability analysis in the education sector.

Becker (1988) emphasized that elements of future investment in human capital are education and skills. Moreover, educational institutions such as schools, universities and discussions on the value of life are also considered as human capital development in the effort to increase the human assets. Clearly, it shows the importance of human capital in ensuring income in a person's life.

Construction of human capital through an education element should be done as early as possible in a formal situation in order to produce the same product in the future. According to Siegler and Alibaba (2005), the formation of values covering mental and physical aspects is from the beginning of the birth of an individual. Therefore, the critical ages for education range from three to five years. At such range of ages, the process of learning and absorption of information are faster and easier. In this case, parents and caregivers should play an important role in ensuring that all processes involved are successfully implemented within those ages.

Aleng (2016) stated that investment in ECE could not be underestimated. This is due to a very drastic change in teaching and learning of pre-schools. At the same time, adequate facilities and strong support from parents are essential in supporting the formation of small-generation who needs the element of education within themselves to progress towards achieving successful life and having positive identity. Thus, it clearly shows the importance of ECE in ensuring that children are well acquainted with their future.

Problem Statement

Currently, the government has invested millions of ringgit in the effort to ensure quality related to ECE to achieve the nation's aspiration for producing first-class human capital that can compete globally. The government is looking forward to a high return of investment on the amount that has been successfully invested. Heckman (2011) noted that the productive workforce alone is capable of

improving the global economy. In other words, undeveloped individual potentially negatively impacts the country's economy. Thus, it shows the importance of investment in the ECE sector.

Research Objective

The research objectives involved in this study is to model the Return on Investment (ROI) to kindergarten children who attended early education.

Findings of Study

Table 6.1 shows the average ROI for government kindergartens between Kindergarten A and Kindergarten B. The highest ROI was from Kindergarten B which recorded RM 0.32 per child, and followed by Kindergarten A at RM 0.16 per child.

Table 6.1: Return on investment for government kindergartens

Kindergartens	Average Return on Investment per child (RM)
Kindergarten A	0.16
Kindergarten B	0.32

On the other hand, the private kindergartens such as Kindergarten D recorded a return of RM 0.81 per child, while Kindergarten C registered a relatively low return of RM 0.39 per child as shown in

Table 6.2.

Table 6.2: Return on investment for private kindergartens

Kindergartens	Average Return on Investment per child (RM)
Kindergarten C	0.39
Kindergarten D	0.81

With regard to ROI, ECE is seen as an important part for children's lives in future. From the results obtained, the ROI of government kindergartens was lower compared to private kindergarten. However, it is more worthwhile because the fees of government kindergartens are much cheaper compared to private kindergartens with the aim of helping the low and middle income groups (National Development Foundation, 2013).

Impact of Findings of Study

The impact of the findings found that the ROI of ECE is very important in order to know the profits that have been acquired by the ECE of the government and private sector. From the study, it has shown that tuition fees in government kindergartens were lower than the private kindergartens. This is because the main objective of establishing government kindergartens is to help the low and middle income groups. However, there are also private kindergartens that offer low and affordable fees.

In relation to that, the fees offered by both kindergartens are relevant nowadays due to the rise in prices of goods from time to time. At the same time, parents or guardians also want to put more emphasis on quality of education irrespective to the cost.

Hence, a formula of investment in education was obtained in the effort to calculate the profit from the investment that has been made.

$$\text{Return on Investment (ROI)} = \frac{\text{Profit}}{\text{Cost of investment}}$$

Profit - Amount earned from payment of related fees

Cost of investment - Amount provided by certain parties

Conclusion

In conclusion, the Return on Investment (ROI) formula of the ECE can facilitate the calculation of profits earned each year. Thus, investment in ECE is one of the noble efforts as a way of generating the national economy while at the same time benefiting children who are leaders in the future.

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