

Public Education Expenditure: A Review on Selected Issues and Analysis

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Abstract

Over the past decades, education has been widely accepted and recognized as one of the key sectors that contribute in human capital development and economic growth. This paper seeks to review on some of the interesting issues concerning the public education expenditure. Additionally, this study will attempt to provide analysis on the trends of the public education expenditure in Malaysia. Time series data of the Malaysian government spending in education sector over the period of 1982 to 2016 was examined and discussed in this paper. The main findings highlighted on the issue of the recent declining pattern of the public education expenditure in Malaysia. The insight illustrated in this paper with regards to the current allocation of the education expenditure in Malaysia will provide a pathway for future analysis on the education sector development.

Keywords: *trend, analysis, issues, review, education, public expenditure*

1 Introduction

The significant role of education on economic growth and human capital development in Malaysia has been long contended by many past researches such as Mohd Shahidan (2014), Ismail and Selvaratnam (1999), Yussof and Zakariya (2009), Sapuan and Sanusi (2013). In fact, education was recognized by Wagner (1983) as a source of expanding public sector. The postulation of education as a notable source for human capital formation and economic growth has sparked our interest to focus on the analysis of education sector development.

Benhabib and Spiegel (1994) further indicated a positive role of education for human capital by modelling the growth of total factor productivity as a function of the level of education. Educated and knowledgeable labour force is better at creating, implementing and adopting new technologies. Increase in education, therefore, leads to a direct enhancement of the technological progress. This view was shared by Tan, Wong and Mohd Noor (2006). Following this view, Tan, Wong and Mohd Noor

(2006) claimed that education makes a positive contribution to society, literate people and produce educated labour force which play significant role in social, economic, demographic, political and cultural development.

The establishment of the significant role of education in social and economic development calls for a study the development and recent allocation of education expenditure in Malaysia. It is also important to note that the analysis of public expenditure has become a central issue in public sector economies and public finance literature as advocated by Ukwueze (2015). It is very much worthwhile to analyse the public education expenditure given that this portion of expenditure constitutes a considerable amount of the budgetary allocation.

This paper will be organized in the following: Section 1 begins with a brief introduction on the study. In the next subsection, an analysis of the trend of the public education expenditure allocation over the past 35 years will be discussed. Section 2 will review on the past literatures related to the education sector and its allocation. Finally, Section 3 will provide a conclusion and suggestion for future empirical study.

Trend of the Public Education Expenditure

In this subsection, an overview and analysis of the past trend of the public education expenditure in Malaysia will be carefully inspected. The following presented Figure 1.1 illustrated the past trend of the budgetary allocation for education sector over the past 35 years from 1982 to 2016.

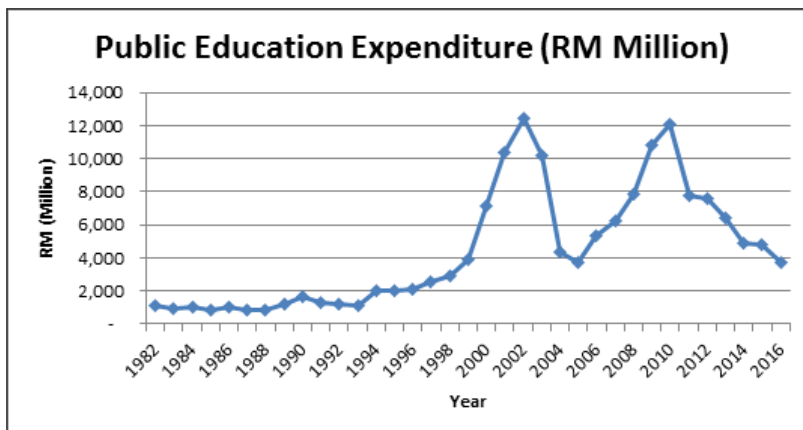


Figure 1 Public education expenditure (RM Million)

Figure 1 clearly shows that the public education expenditure in Malaysia experienced fluctuations of incremental and declining pattern throughout the 35 years period. From the year 1982 to 2002, education expenditure was found to steadily

rise and reaching the peak of RM12,436 million in 2002. By the year 2003 to 2005, the public education spending experienced a slight decline to its overall allocation. Nonetheless, the expenditure trend slowly climbed during 2006 and reaching the peak of RM12,046 million in the year 2010. In the recent years, the public education expenditure showed a declining pattern and continuously plunges throughout the period of 2011 to 2016. The recently declining size of the allocation which began in the year 2011 is starting to create a worrying sign. In fact, the education sector had continued took a hard hit when its allocation and distribution was massively cut in the recent Budget 2016 and Budget 2017. Prof Patrick Ziegenhain noted that neighbouring countries such as Indonesia and Philippines had recently put greater emphasis on their education sector by pumping more resources into its education development (Augustin, 2017). Hence, any further budget cutting to the education sector will do much harm to the socio-economic development in Malaysia.

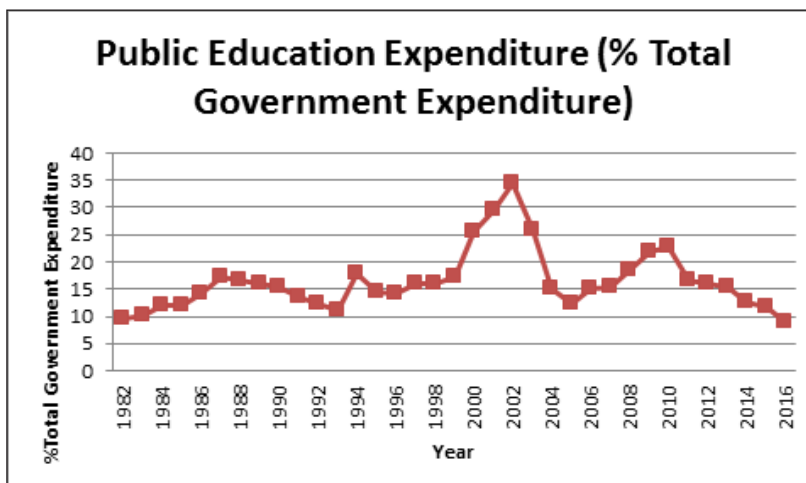


Figure 2 Public education expenditure (% total public expenditure)

Figure 2 illustrates the public education expenditure allocation in terms of percentage of the total government spending from 1982 to 2016. The education expenditure as a percentage of the total government spending clearly exhibited fluctuations over the past. An increasing trend of the education expenditure as a percentage of total government expenditure can be observed in between 1982 to 1987. By the year 1988, the total budgetary allocation for education expenditure slowly decline to fell to 11.0% in 1993. The public education spending received the highest portion of the total government expenditure of 34.6% in the year 2002. In 2003, the education expenditure as a percentage of total public expenditure plummeted to 12.2%. From 2006 to 2010, the change of education expenditure as percentage of the total government spending rises slightly reaching to 22.8%. However, the pattern of changes in education expenditure as percentage of total public spending dropped to the lowest of 8.9% in 2016.

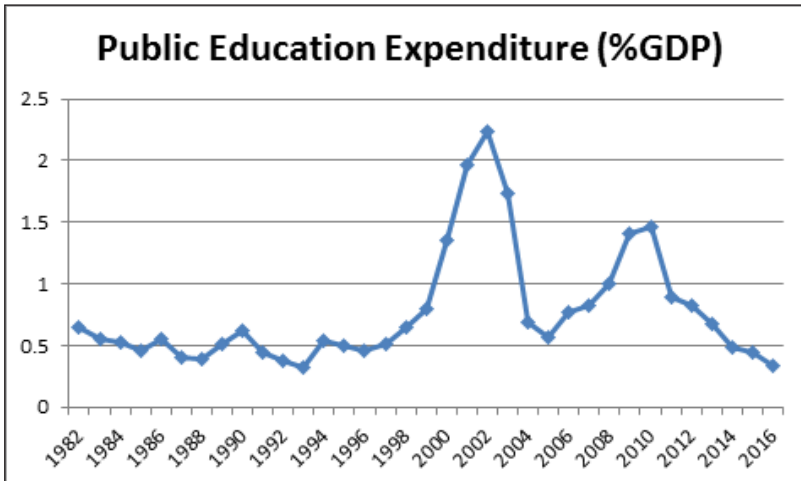


Figure 3 Public education expenditure (% GDP)

Figure 3 shows that pattern of the changes in the education expenditure as a percentage of GDP during the past 35 years from 1982 to 2016. It is observable that the relative amount of education expenditure to GDP varied across the past decades. From 1982 to 1995, it was evident that a consistent up and down pattern was found on the overall trend of the relative amount of educational expenditure to GDP. The education expenditure as a percentage of GDP exhibited increasing trend beginning in the year 1995. By the year 2002, the education expenditure as percentage of GDP reaches the peak of 2.2%. The relative amount of education expenditure in terms of percentage of GDP showed a steadily declining pattern in between 2003 to 2006. Shortly, an increase of the education spending can be detected in between 2007 to 2010. However, the education expenditure expressed as a percentage of GDP dropped sharply reaching to its lowest of 0.3%.

2.0 Literature Review

Public Education Expenditure and Economic Growth

A number of studies over the past decades had featured the contributions of education sector towards national economic growth. These papers had successfully tackled on the issues of the how the public intervention through education expenditure contributes to economic evolution. Baffes and Shah (1998) provided a robust empirical result that supported the hypothesis that education spending will turn stimulate economic growth. They contended that the investment in human capital and knowledge spillovers significantly contribute to the economic growth. Concluded from this study, Baffes and Shah (1998) recommended that developing countries can

improve on their growth performances through the adoption of economic strategies which foster on education and training. Matsushita et al. (2006) suggested that the enrolments in vocational education and technical training, and higher education are fundamental to long term economic growth. The increase of the number of highly educated labours will increase the supply of skilled workers, which result in a more productive economic growth. Hence, this signified the importance of education sector to the economic growth of a country.

A number of studies had also been conducted with context to Malaysia. Ismail and Selvaratnam (1999) employed a simultaneous equation model to estimates the relationship between economic growth and human capital variables such as education in Malaysia. Their findings revealed strong significant relationship between education and economic growth. Percentage of expenditure on vocational and technical as well as tertiary education generated positive significant impact on economic growth. Their results further accentuated that technical and vocational education served in producing skilled and semi-skilled manpower was able to meet the present industrial sectors' needs. A greater emphasis on human capital investment was crucial and much needed to build highly skilled and productive workforce that would enhance the nation's economic growth.

A study on the Malaysian Knowledge-based economy by Tan, Wong and Noor (2006) revealed the importance of education as a primary factor that sustained economic growth. Both the education and human capital was introduced into the Malaysian production function as knowledge-based factor input. Multivariate co-integration test result provides robust evidence that education, technical progress, labour, capital and economic growth of the country have a long run equilibrium relationship, thus allowing them to elevate together over time. The short run estimation based on vector error correction modelling implied that human capital with stock of knowledge accumulated through education contributed to the Malaysian economic growth. Hence, education was considered as the second most important input factor that promotes economic growth after physical capital.

Yussof and Zakariya (2009) conducted a study to analyse the economic growth and higher education demand in Malaysia for 1972 to 2004 period. Their OLS regression analysis showed a significant relationship between the diploma programmes enrolment and national economic growth. This evidently suggested that education was able to foster national income growth. Consistent with the other past researches, Yussof and Zakariya (2009) supported public sector to place greater emphasize on education. The significant role of education was recognized in promoting labour productivity and technology advancement. In another study, Shaihani, Haris, Ismail and Said (2011) examined the long run and short run effect of Malaysia education level on the economic growth over the period of 1978 to 2007. The empirical research was conducted by

using the autoregressive distributed lag (ARDL) method on the time series data. Secondary education was found to exhibit positive significant relationship with economic development in the short run. Meanwhile, tertiary education demonstrated positive significant impact on the economic growth in the long run.

Govindaraju, Rao and Anwar (2011) affirmed that the government spending in education is an important determinant of the GDP growth. In other words, education sector will enhance the GDP growth through improve productivity. In this paper, the time series data in Malaysia over the period of 1970 to 2006 was examined through bivariate and multivariate model application to study the relationship between the government spending on education and GDP. Mohd Yahya et al. (2012) explored the long-run relationship and causality between government expenditure in education and economic growth in Malaysia. The time series data in Malaysia over the period of 1970 to 2010 was analyzed empirically. The Vector Auto Regression (VAR) method, Granger causality test and Co-integration such as Johansen Multivariate Cointegration test were employed in this study. Their finding evidently showed that economic growth Granger cause the education expenditure variable and vice versa in the short-run. As such, confirming the existence of a long-run relationship between education expenditure and economic growth.

In another study, Lai and Yussof (2014) revealed the existence of long run relationship between education level and economic growth. An examination on the long run relationship between human capital accumulation and economic growth in Malaysia from 1981 to 2010 was performed through Autoregressive Distributed Lag (ARDL) model. Their findings implied that labor with high level education had positive effect towards GDP. A highly educated manpower will be more productive and technology savvy, thus able to contributing significantly to the economic growth. Henceforth, signifying that a higher investment in education will heighten Malaysia modernization and as a lucrative nation.

Another empirical paper by Mohd Shahidan (2014) shared the view postulated by past studies and corroborated that Malaysia Government should increase investment on education. Public investment in education sector was proven to produce desirable impact on greater employment opportunities and higher lifetime earnings as viewed by other studies. Mohd Shahidan (2014) employed the Johansen co-integration test and Granger causality model to empirically analyze the time series data from 1982 to 2011. A uni-directional relationship that flows from secondary education to the economic growth was found in the Granger causality test result. Meanwhile, a significant long run relationship between education level and economic growth was found from the Johansen Cointegration test. These findings further affirmed that education sector was able to produce highly skilled and knowledgeable manpower which constitute the country's human capital force.

Positive Spillovers of Public Education Expenditure

Next, we will review on the past studies which discussed on the positive spillovers of public education expenditure. A major literature in this subtopic characterized the desirable effect of public education spending to individuals and society as a whole. Gupta and Verhoeven (2001) showed that the government education expenditure was positively related to the education attainment. An empirically analysis was performed using the Free Disposal Hull (FDH) technique on the government education expenditure in Africa from 1984 to 1995. Al-Samarrai (2003) reported the findings which advocated that the improvement of public spending management system is significant in strengthening the relationship between public spending and education outcomes. The cross-country analysis showed that increasing the resources though is necessary to achieve the education goals. In such manner, it would only be reasonable to justify that any improvement to the education outcomes would clearly need an increase spending.

Anyanwu and Erhijakpor (2007) investigated the panel data of African countries from 1990 to 2002 through regression analysis. It is well proven that government education expenditure matters very much for higher education attainment. Policymakers would need to pay attention to the absolute expenditures within the education sector. The absolute expenditures in terms of their size and efficiency are important drivers for promoting equity and furthering second-generation reforms. Education outcomes are imperative for social welfare improvement and economic growth. However, there had been concern regarding the efficiency of such spending. Question arises on the ability of the existing education system in maximizing students' potential and to effectively respond to the changes in demand.

Robust evidence from Odit, Dookhan and Fauzel (2010) showed that showed human capital greatly enhances productivity, thus providing an improvement to the output level. The impact of education investment in Mauritius was examined through Cobb-Douglas production from 1990 to 2006. Cointegration test employed in this research supported the argument that education attainment is viewed as crucial factor in enhancing economic growth. A higher level of schooling years lead to increase of productivity. In other words, the average level of schooling was considered as to directly affect the total factor productivity. Human capital accumulation is required for development and for new technologies adoption.

In a separate research by Dauda (2011), an examination on the effect of Nigerian government education expenditure to its schooling outcomes was conducted from 1975 to 2007. This study employed the co-integration technique and error correction mechanism with vector auto-regression methodology. The results indicated that the

public education spending exhibited positive impacts on the schooling outcome. Policy implications from this study suggested that the government should emphasized on policies that enhance education attainment through adequate public social investment under stable macroeconomic environment. Dauda (2011) claimed that public education expenditure was recognized as a key aspect of fiscal outlays in most developing countries as established in the mainstream economic literature. Education was found to be having positive significant effects on economic growth, reducing fertility rates and improving society as a whole. The allocation of the public education expenditure justified on the ground that any provision of social goods provide the rationale for the allocative function of budget policy. Dauda (2011) concluded that government should massively invest in education as a matter of urgency.

In another view, Hildago and Ormaetxe (2018) stressed the significant role of government intervention to equalize opportunities. Public intervention through education is seen as one of the most important tools to promote equality of opportunity and thereby reducing the effects of poverty in the long run. Higher public education expenditure on both the primary and secondary education was associated with lower poverty rates in adulthood and helps to redistribute income. Public intervention in education will possibly lead to equitable distribution of income and wealth by ensuring equal education opportunities to all. Education does not just directly benefit individuals alone but the society as a whole.

Alternatively, an examination of the long run relationship between education expenditure and economic growth for both the developing and developed countries was carried out by Idrees and Siddiqi (2013). Single-equation approach of panel cointegration and Pedroni's residual-based panel cointegration test was applied in this analysis. In their comparison between developed countries and developing countries, it was concluded that developing countries showed a greater impact of public education expenditure on economic growth. This consequently provided an illustration of the catching-up effect phenomenon from the developing countries.

Estimation of instrumental variable models by Jackson, Johnson and Persico (2016) on United States data showed that every 10% increase in education expenditure leads to higher education completion rate, higher wage rate and reduce poverty rate. It is therefore inferred that education sector played crucial role in reducing the intergeneration transmission of poverty. Therefore, it is suggested that education investment produced a sizable effect in reducing education attainment gaps between children from low-income and high-income families. The review on these studies clearly ascertained the positive spillovers effects of education expenditure in producing beneficial effects to individuals and society as a whole. Various positive spillovers effects such as reduction of poverty rates and provision of equitable redistribution of income can be observed as contended in the studies of past decades.

Size and Efficiency of Public Education Allocation

Stemming from the evidence of past findings that government education spending stimulate economic growth, promote income equality and reduce poverty, policy makers become interested in the efficiency and the size of the government allocation. As Baqir (2002) stressed, the levels of countries' economic development vary considerably according to how much governments spend on education sector. In light of this, Gupta, Verhoeven and Tiongsan (2002) studied on the cross-sectional data of government education expenditure in 50 developing and transition economies. Their study was inferred that the size of public education expenditure is an important driver that can promote equity. Government intervention through education expenditure is necessary to ensure everyone had a free access to education. The empirical study was conducted by employing ordinary least square (OLS) regression and two-stage least squares (2SLS) regression respectively. It is evident that a greater public expenditure on primary and secondary education promotes higher education attainment. Increasing public education expenditure will be most likely accompanied by a higher social rate of return. As such, this implied that higher education expenditure allocations are able to boost economic growth and promote the well-being of the society.

The importance of government education expenditure on national development and its role in promoting growth and knowledge deepening has been emphasized by many studies in the past. Education improves the occupation mobility, thus, reducing the unemployment level, increases the earning capacity and the productivity of the work force. Highly skilled and knowledgeable labour will propel any economy to an accelerating growth rate. On this basis, therefore, Obi et al. (2016) performed a rigorous study which demonstrated positive significant effect of public education expenditure on school enrollment rate. Higher enrolment rate improved tremendously on the literacy rate of the population. The investigation of the public education spending and education outcome in Nigeria from 1970 to 2013 was conducted by Obi et al. (2016) using the Ordinary Least Square (OLS) technique. In general, it can be summarized that a higher spending is associated with not just higher enrolment rate but better student performance as well. As such, it is recommended that the government should spend more on education and to monitor its spending so as to achieve the desirable positive effects.

In another paper by Mallick et al. (2016) sought a discussion on the dynamics of education expenditure and economic growth in selected 14 major Asian countries (Bangladesh, China, Hong Kong, India, Japan, Nepal, Pakistan, Malaysia, Philippines, Saudi Arabia, Singapore, Sri Lanka, Thailand and Turkey). Balanced panel data from 1973 to 2012 was empirically analyzed by employing the Pedroni cointegration approach. Long run estimation result from their analysis pointed out the existence

of long run equilibrium relationships between education expenditure and economic growth in all the countries studied. Meanwhile, empirical evidence from Fully Modified OLS (FMOLS) showed a significant positive impact of education expenditure on economic development for all 14 selected Asian countries. It was concluded in this paper that investment in education is an essential factors that contribute to economic growth in the long run. Mallick et al. (2016) further enunciated that countries should subsidize education sector to make it affordable to all. Policies that enhance the quality of education will only be successful if it is accompanied by an increase to the government education expenditure. It is therefore proven from these literatures that the size of public education expenditure does affect the efficiency of the education sector in producing desirable positive effects. Given that the size of education spending is relatively important, a natural question arises as to what determines the growth of public sector in education sector.

3 Conclusion

Public intervention through education expenditure leads to economic growth, improvement on the future incomes of individuals, reducing poverty rates and promotes equitable distribution of income to the society as a whole. Based on the literatures review, the notion of positive desirable outcomes provided by education sector in economic development and social development was strongly consolidated. The literature on the effectiveness of public education expenditure further showed the importance of the size of its allocation in maximizing its efficiency. The analysis on the past trends of the Malaysia's public education expenditure highlighted the issue of the recent declining pattern of the allocation in Malaysia. Therefore, suggesting that there is a need to sought answers to the arising current issue of the government education expenditure growth. A review on this concerning issue had provided a pathway for future study that can offer explanation to the current trends of public education expenditure in Malaysia.

References

- Augustin, R. (2017). Malaysia cuts education budget, but Indonesia, Philippines spend more. Retrieved from <https://www.malaysia-today.net/2017/04/26/malaysia-cuts-education-budget-but-indonesia-philippines-spend-more/>.
- Al-Samarrai, S. (2003). *Financing primary education for all: Public expenditure and education outcomes in Africa*. Institute of Development Studies. University of Sussex.
- Anyanwu, J. C., & Eihijakpor, A. E. O. (2007). Education expenditures and school enrolment in Africa: Illustrations from Nigeria and other SANE countries. *Economic Research Working Paper Series No. 92*.

- Baffes, J., & Shah, A. (1998). Productivity of public spending, sectoral allocation choices, and economic growth. *Economic Development and Cultural Change*, 46 (2), 291 – 303.
- Baqir, R. (2002). Social sector spending in a panel of countries. *International Monetary Fund Working Paper WP/02/35*. Washington, DC.
- Benhabib, J., & Spiegel, M. M. (1994). The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary Economics*, 34, 143 – 173.
- Dauda, R. O. S. (2011). Effect of public educational spending and macroeconomic uncertainty on schooling outcomes: Evidence from Nigeria. *Journal of Economics, Finance and Administrative Science*, 16 (31), 7 – 21.
- Govindaraju, V. C., Rao, R., & Anwar, S. (2011). Economic growth and government spending in Malaysia: A re-examination of Wagner and Keynesian views. *Economic Change and Restructuring*, 44 (3), 203 – 219.
- Gupta, S., & Verhoeven, M. (2001). The efficiency of government expenditure experiences from Africa. *Journal of Policy Modeling*, 23 (4), 433 – 467.
- Gupta, S., Verhoeven, M., & Tiongsan, E. R. (2002). The effectiveness of government spending on education and health care in developing and transition economies. *European Journal of Political Economy*, 18 (4), 717 – 737.
- Hildago, M. H., & Ormaetxe, I. I. (2018). Long-run Effects of Public Expenditure on Poverty. *The Journal of Economic Inequality*, 16 (1), 1 – 22.
- Idrees, A. S., & Siddiqi, M. W. (2013). Does public education expenditure cause economic growth? Comparison of Developed and Developing Countries. *Pakistan Journal of Commerce and Social Sciences*, 7 (1), 174 – 183.
- Ismail, R., & Selvaratnam, D. P. (1999). Health, education and economic growth in Malaysia. *IJUM Journal of Economics and Management*, 7 (2), 1 – 15.
- Jackson, C. K., Johnson, R. C., & Persico, C. (2016). The effects of school spending on educational and economic outcomes: Evidence from school finance reforms. *Quarterly Journal of Economics*, 131 (1), 157 – 218.
- Lai, W. S., & Yusoff, I. (2014). Human capital accumulation and economic growth in Malaysia investigating the long run nexus. *Jurnal Ekonomi Malaysia*, 48 (1), 155 - 165.
- Mallick, L., Das, P. K., & Pradhan, K. C. (2016). Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis. *Theoretical and Applied Economics*, 23 (2), 173 – 186.
- Matsushita, S., Siddique, A., & Giles, M. (2006). Education and economic growth: A case study of Australia. *Economic Discussion/ Working Paper*. The University of Western Australia, Department of Economics.
- Mohd Shahidan, S. (2014). Education-led economic growth in Malaysia. *SOP Transactions on Economic Research*, 1 (1), 28 – 32.
- Mohd Yahya Mohd Hussin, Fidlizan Muhammad, Mohd Fauzi Abu @ Hussin, & Azila Abdul Razak. (2012). Education expenditure and economic growth: A causal analysis for Malaysia. *Journal of Economics and Sustainable Development*, 3 (7), 71 – 81.
- Obi, C. U., Ekesiobi, S. C., Dimnwobi, S. K., & Mgbemena, E. M. (2016). Government education spending and education outcome in Nigeria. *International Journal of Economics, Finance and Management Sciences*, 4 (4), 223 – 234.
- Odit, M. P., Dookhan, K., & Fauzel, S. (2010). The impact of education on economic growth: The case of Mauritius. *International Business and Economics Research Journal*, 9 (8), 141 –152.

- Sapuan, N. M., & Sanusi, N. A. (2013). Cointegration analysis of social services expenditure and human capital development in Malaysia: A bound testing approach. *Journal of Economic Cooperation and Development*, 34 (1), 1 – 18.
- Shaihani, A. L., Haris, A., Ismail, N. W., & Said, R. (2011). Long Run and Short Run Effects on Education Levels: Case in Malaysia. *International Journal of Economics and Research*, 2 (6), 77 - 87.
- Tan, H. B., Wong, M. F., & Noor, Z. M. (2006). Education and growth in Malaysian knowledge based economy. *International Journal of Economics and Management*, 1 (1), 141 – 154.
- Ukwueze, E. R. (2015). Determinants of the size of public expenditure in Nigeria. *SAGE Open*, 1– 8.
- Yussof, I., & Zakariya, Z. (2009). Pertumbuhan Ekonomi dan Keperluan Pendidikan Tinggi di Malaysia. *Jurnal Ekonomi Malaysia*, 43, 85 – 105.