

SOCIAL ACCOUNTING MATRIX: AN INITIAL STUDY ON MULTIPLIER ANALYSIS USING MALAYSIA COMPENSATION OF EMPLOYEES STATISTICS

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Introduction

Malaysia, similar to other developing countries, has a national development plan that emphasis on accelerating economic growth. The absence of linkages between socioeconomic statistics and measurement issues in the labour market commonly occurs. These issues extended the needs on better indicators with social accounting multiplier statistics in matrix form. Production activities of each sector in the economy managed to create employment opportunities for a household which indirectly drives the country's economy. The production activities need raw materials and manpower in the process to produce final products for users. The objective of this paper is to study multiplier analysis of the compensation of employees using Malaysia statistics from the Social Accounting Matrix (SAM). Multiplier analysis is commonly studied by developed countries to identify the key economic driven sectors. This paper is an initial initiative on Multiplier Analysis studied on Compensation of Employee (CE) in Malaysia economy using Statistics from Social Accounting Matrix (SAM) 2015, which published by the Department of Statistics Malaysia (DOSM).

Methodology

The compensation of employee multiplier measures the total increase in compensation of employees in the Malaysia Economy resulting from an increase in total compensation of employees received by employees. **Leontief inverse matrix** has been employed in this analysis, where Leontief inverse matrix indicated coefficients (economic multipliers) that measure consecutive effects on the economy as a result of the initial increase in output of the production activity. The statistical techniques that applied in this study involving calculations on the coefficient of CE derivation, identity matrix creation, subtraction of identity matrix with the CE's coefficient and Leontief inverse matrix.

Analysis and Findings

Table 1: CE multiplier effect by sector, 2015

	Sectors				
	Agriculture	Mining & Quarrying	Manufacturing	Construction	Services
Urban	0.21	0.22	0.26	0.39	0.41
Rural	0.10	0.04	0.06	0.09	0.09
Total	0.31	0.27	0.32	0.48	0.50

Table 1 shows the CE multiplier effect according to region categories by sectors, it revealed that highest total compensation of employees' multiplier effect in Malaysia is the services sector, 0.50. This result indicated that for every one (1) Ringgit Malaysia increase in the demand of services sector at national level, will resulting 0.50 Ringgit Malaysia rise on the compensation of employees.

Table 2: CE multiplier effect by production activities, 2015

Production activities	Urban	Rural	Total
Crops, animal production and hunting	0.19	0.11	0.30
Forestry and logging	0.19	0.06	0.25
Fishing and aquaculture	0.18	0.06	0.24
Extraction of crude petroleum and natural gas	0.21	0.04	0.24
Mining of metal ores	0.34	0.05	0.39
Mining of coal and lignite	0.24	0.07	0.31
Other mining and quarrying	0.26	0.10	0.37
Food products	0.23	0.07	0.31
Beverages and tobacco products	0.22	0.05	0.27
Textiles, wearing apparel and leather products	0.29	0.05	0.34
Wood, furniture, paper products and printing	0.33	0.06	0.39
Petroleum, chemical and rubber products	0.21	0.04	0.25
Metal and other non-metallic mineral products	0.27	0.05	0.31
Electrical, electronic and optical products	0.24	0.04	0.28
Transport equipment and other manufacturing	0.23	0.04	0.27
Construction of buildings	0.37	0.08	0.45
Civil engineering	0.37	0.09	0.47
Specialised construction activities	0.36	0.07	0.42
Utilities	0.23	0.05	0.28
Wholesale and retail trade	0.33	0.08	0.40
Food & beverage and accommodation	0.34	0.08	0.42
Transportation and storage	0.34	0.06	0.39
Information and communication	0.32	0.08	0.40
Finance	0.41	0.05	0.46
Real estate	0.24	0.04	0.29
Rental and leasing	0.33	0.04	0.37
Research and development	0.39	0.05	0.44
Business services	0.41	0.07	0.48
Education	0.68	0.20	0.88
Health	0.54	0.10	0.64
Government services	0.66	0.16	0.82
NPISHs	0.40	0.08	0.48
Other services activities	0.36	0.06	0.43

The education service activities obtained highest CE multiplier for both urban and rural area with 0.68 and 0.20 respectively as shown in Table 2. This indicated that the education services activities generated large income to the employees in both areas.

Besides, the government services, health services and business services activities also have a high CE multiplier effect for the economy in an urban area, with the values of multiplier registered 0.66, 0.54 and 0.41 respectively. In rural area, the government services (0.16), crops, animal production and hunting activities (0.11) and health services activities (0.10) also contributed high CE multiplier effect.

Thus, the empirical result in this study indicated significant multiplier that impact and the most influencing CE in the Malaysia's economy are precisely driven by **education services activities**, which has highest CE multiplier effect of 0.88. Thus, this indicated that for every one (1) Ringgit Malaysia increase in the demand of education services at national level, will resulting 0.88 Ringgit Malaysia rise on the compensation of employees.

Conclusion

The econometric analysis approaches implemented in this study was in line with the effects of conventional economics assessment methodology by using the social accounting matrix framework. Based on the research findings, education services is the main component influencing the compensation of employees in Malaysia, it play an important role as an integral part of the economic infrastructure of a country and region in generating employment and output, attract earnings and contribute to national gross domestic product.

Selected References:

- DOSM. (2015). *Social Accounting Matrix 2015*. ISSN:2600-7363, Department of Statistics Malaysia (DOSM). Putrajaya, Malaysia.
- Gasperova, L., Mozuchova, L. and Rostasova, M. (2017). *Economic Impact and Multiplier effect of University on Economic Development of the Host Region*. University of Zilina, Slovakia.
- Round, J. (2003). Chapter 14 – Social Accounting Matrices and SAM-based Multiplier Analysis. Department of Economics, University of Warwick, United Kingdom