

A Study on Path Analysis of Determinants of Low-income Households: An Evidence from Korea

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Abstract

Deciding low-income intensifies poverty rate, on July of 2017, the government of Korea has announced to raise minimum wage in order to make change to labor market structure. Income inequality has long been a social issue, and housing income is considered to be major determinant. With sample data in a medium-sized city of Korea, this study investigates causal relationship among parametric variables utilizing path analysis. We find that the quality of job for the households leads to income of the sample data analyzed.

Keywords: *Small-to-medium sized city, Low-income, Factors, Path analysis, Macro variables*

1. Introduction

There is conceptual frame pre-defined between the level of income and poverty. Poverty is determined upon household income, which is comprised of earned and non-wage incomes. Earned income differentials stem from the number of income earners in household, number of hours worked, and wage gap. One important influential factor is the number of income earner for each household. Household composition (including structural change), tax, and non-wage income are additional driving factors of income distribution. Not only is identifying driving factors of income distribution important, but finding inter-relation among factors also is critical to develop relevant policies.

This paper aims to study income inequality in theoretical perspective, and analyze factors of income differentials. It investigates causal relationship among factors; thus, it contributes to distinguish inefficient policies. The structure of this paper is as follows. Section two discusses the trends of income inequality. Section three presents previous researches and describes research model used in this study. Section four presents empirical analysis, and Section five discusses the results with implications.

2. Previous literature and the model

Previous researches cover and combine different factors in various topics. There are studies investigating various drivers such as inflation, nations' wealth, economic development index, and other macroeconomic factors as a measure of income inequality. [2][7][9] Other scholars present demographic effects on income gap including education and rural population. [4][11] Studies on citizen role and redistribution of assets and FDI inflows as political factors

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are covered. [1][10] Studies figure urbanization, age structure and household structure as demographic drivers for income inequality. [3][15] Researches on cultural and environmental factors state that such variables lead to poverty rate, which use land concentration, cultural characteristics, and rising shadow economy respectively [5][12].

In Korea, previous researches are divided into micro-level and macro-level. Study on variables pertinent to micro-level, which identify poverty eradicating causes from dynamic analysis [11]. Macro-level studies use distribution structure of economy, labor market, economic variables, and opportunistic structure [8][16]. There are several empirical studies interpreting both macro and micro variables [14].

As income inequality is such an important issue, figuring causes is necessary for sustainable development for a country. Although many literatures have worked on such area, no study has provided empirical evidence for inter-causal relationship among variables. This study is original in two aspects. This is the first study which identifies causal relation between driving factors of income inequality. Second, we present an empirical result with factor analysis with medium-sized city data in Korea. Shown in [Figure 1], path analysis is utilized to present directed dependencies among variables on hand. As it shows linear causal model by path coefficients, result can be interpreted with decomposed variables. The model is fundamentally written as following form:

$$r_{i,j} = \sum_q P_{i,q} r_{i,q}$$

where I and j denote two different variables given and q applied to all variables from which paths lead.

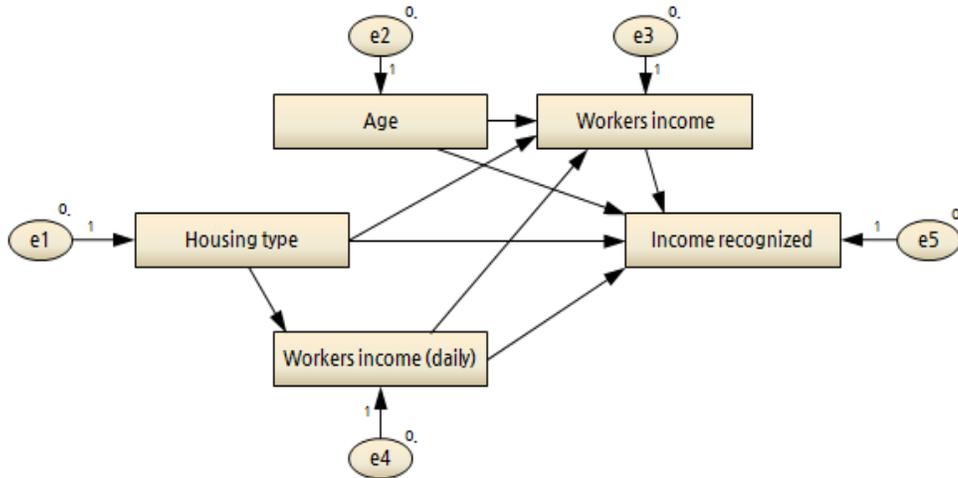


Figure 1. Research model

3. Empirical test

This paper aims to investigate how variables are inter-related. The sample data is total of 2,955 retrieved from local government in Korea.

Table 1. Variables

Variable	Details
Age	Age of householder
Householder tax	Households which householder pays income tax
Housing type	Type of house
Workers income	Income amount for daily workers
Income recognition	Amount of income recognized

The variables used in the analysis is presented as follows: (i) Age of householder, (ii) Households which householder pays income tax, (iii) Type of living house, (v) Income amount for daily workers, and (vi) Amount of income recognized, shown in [Table 1].

Table 2. Causal effects test results

		Effects in detail		
		Indirect effects	Direct effects	Total effects
Worker's income	House type	0	0.021	0.021***
Householder's tax	Age	0	-0.358	-0.358***
	House type	0	-0.063	-0.063***
	Worker's income	0	-0.014	-0.014
Income recognized	House type	-0.027*	-0.018	-0.045
	Age	-0.202	0.011	-0.191
	Worker's income	-0.008	0.415	0.407***
	Householder's tax	0	0.564	0.564***

Reject if 0; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Shown in [Table 2], causal relationship between explanatory variables is confirmed as four paths becomes statistically significant. Householders tax variable is influenced by householders' age, and Worker's income and Householder tax lead to Income recognition.

4. Conclusion

Various factors are at the base of income inequalities, and this study aims to decompose and conduct path analysis of the factors affecting household income. As examined the interrelation between driving forces of household income,

Since the level of income inequality differs across the globe, the importance of this study is that it contributes to figuring the causal relationship between driving factors of low incomes in medium-sized city of Korea. In the aftermath of conducting path analysis, householders age becomes meaningful variable for the householders who work as permanent employees. As resulted significant, working status (in other words, the quality of job) becomes determinant factors for the income. This result may persuade the government in that raising minimum wage is less important than the job security. Although the present study generated

insights on income determinants, small size of data remains limited which calls for further research in the future.

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