A STUDY ON FACTORS INFLUENCING THE STATUS OF THE WORKING POOR IN WELFARE STATES

BY

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DISSERTATION

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ABSTRACT

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Background: Labor has not been a sufficient means of preventing poverty since the end of the 20th century. Due to this uncertain relationship between labor and poverty, the working poor issue has reemerged as a social problem around the world.

Purpose of Study: The purpose of this study is to identify factors influencing the status of the working poor in the welfare states, whose income is below the 60% of median household income. Using multidimensional state level data, the current study examined the conditions of the working poor by applying cross-national comparative approaches.

Methods: Using secondary data from the International Social Survey Programmes (ISSP), Social Insurance Entitlement Dataset (SIED), and Organization for Economic Co-operation and Development (OECD), individual characteristics including the householder's characteristics and household composition were measured, and state-level characteristics in welfare states were measured using decommodification and Active Labor Market Policies (ALMPs).

Analysis: This study identified factors that influence the working poor status on an individual- and state-level using Hierarchical Generalized Linear Modeling (HGLM). The working poor

status was a dichotomous variable, which categorizes the working poor and the non-working poor.

Results: At the individual level, a female head household, a single head of household, and a head of household with lower education levels, having a part-time job or no job, and having more children were significant factors associated with the odds of being the working poor. At the state-level, decommodification levels were significantly associated with the odds of being the working poor. The results also showed that high decommodification levels decreased the odds of being the working poor for female householder and part-time laborer. ALMPs expenditure reduced the odds of being the working poor in a household which has many children.

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Not only so, but we also glory in our sufferings, because we know that suffering produces perseverance; perseverance, character; and character, hope (Romans 5:3&4).

LIST OF FIGURES

Figures

LIST OF TABLES

Tables

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

Poverty is one of the oldest social problems[1] and a risk factor impacting humankind. In 2015, 9.9% of the global population lived below the poverty threshold of less than US$1.90 a day. It means that approximately 736 million people suffered from an extreme poverty worldwide (World Bank, 2019). Although efforts have been made to lift millions of people out of poverty relative to the previous centuries, extreme poverty still remains one of the world's biggest social challenges.

Problem Statement

Although extreme poverty rate[2] has steadily decreased in the world[3] (World Bank, 2019), it is difficult to ascertain the magnitude of the reduction[4]. This is particularly true because each country has its own poverty line that determines what qualifies as being poor. State interventions to alleviate poverty have also varied. Traditionally, the states' interventions have focused on vulnerable groups, such as older adults, children, women, female-headed families, and people with disabilities (Grogger, 2003; Harris, 1993; McGranahan, 1985; Minkler & Stone, 1985). It is believed that vulnerable groups are poor due to market failures in which the allocation of goods and services by a free market is not efficient which results in high rates of unemployment, poor pay, labor relocations or people not earning a "living wage." Government interventions to

[1] Although poverty has existed in different patterns and shapes since the beginning of mankind, poverty had not been recognized as a social problem by the 16th century. However, poverty has been recognized as social problem since the 16th century because Poor Law legislated in the 16th century, such as British Act Concerning Punishment of Beggars and Vagabonds in 1531 and Elizabethan Act for the Relief of the Poor in 1601 (Kuhnle & Sander, 2010).

[2] The extreme poverty rate means poverty headcount ratio at US$1.90 a day (2011 PPP) (% of population) (World Bank, 2019).

[3] The extreme poverty rate was decreased from 42.1% in 1981 to 9.9% in 2015 (World Bank, 2019).

[4] According to Crettaz (2011), "the worst forms of poverty—extreme poverty—have virtually been eradicated in post-industrial economies, whereas this opinion is probably not dominant" (p. 11).

respond to these failures have included providing public goods and welfare programs, especially for people who have limited ability to earn high income. Recent literature (e.g. Brülle et al, 2019; Crettaz, 2013; Halleröd et al., 2015; Marx et al., 2012; Strier et al., 2016) argues that the poor or the working class cannot be solely protected by relying on their paid work. Employment may not inoculate the poor against poverty. Also, competitive labor market environments, high cost of labor, a need for a high skilled labor force, and other social factors, including the impact of globalization may displace workers further exacerbating the problem of the working poor (Brady et al., 2010; Manning, 2004).

Paid work is the major source of income for the majority of individuals and households across the world. Therefore, any dysfunctions in the paid work systems can severely disrupt the household (International Labour Organization: ILO, 2019). Moreover, millions of workers are in jobs that provide low pay, often lack key benefits, such as paid sick leave contributing to income volatility. Thus, Crettaz (2011) contends that "in today's advanced economies, we may be puzzled to find that a person holding a job—sometimes a full-time job—has to endure poverty" (p. 1). This study uses the International Labour Organization's (ILO)'s (2018) definition of the working poor "as the employed persons who, despite being employed, live in households with per capita consumption or income that is below the poverty line" (p.58). Given this definition, 13% of employed individuals in the world were considered to be in moderate poverty[5] and 8 % of employed persons were living in extreme poverty in 2018 (ILO, 2019).

Purpose of Study

The purpose of this study is to examine individual and state-level factors contributing to the working poor across 25 countries that represent North America, Eastern Europe, Western

[5] ILO (2019) defines moderate poverty is "if living in household daily per capita income is US$1.90 PPP or higher but under US$3.10 PPP" (p.4), while extreme working poverty is under US$1.90 PPP per day.

Europe Southern Europe, Northern Europe, Oceania, and East Asia. It reappraises the traditional beliefs that paid work is an antidote to poverty. It probes the relationships between the welfare state characteristics based on decommodification and Active Labor Market Policies (ALMPs), household features, and the working poor status of countries.

Decommodification is defined as "the degree to which individuals, or families, can uphold a socially acceptable standard of living independent of market participation" (Esping-Andersen, 1990, p.37). In political economics, decommodification, therefore, is the degree in which states can provide social entitlements for citizens to cushion themselves against market dependency. Therefore, this dissertation research attempts to understand the systematic problem of the working poor in a welfare state. Using rigorous cross-sectional data from the International Social Survey Programme (ISSP), Social Insurance Entitlement Dataset (SIED), and Organization for Economic Co-operation and Development (OECD) datasets, this study produces useful knowledge on the state of the working poor in the modern welfare state. It is guided by the following research questions.

Research Questions

1. What are individual-level factors (e.g., gender, education, marital status, number of household members, number of children, and current employment status) affecting the likelihood of being the working poor?
2. What are state-level factors (e.g., decommodification and Active Labor Market policies) affecting the likelihood of being the working poor?

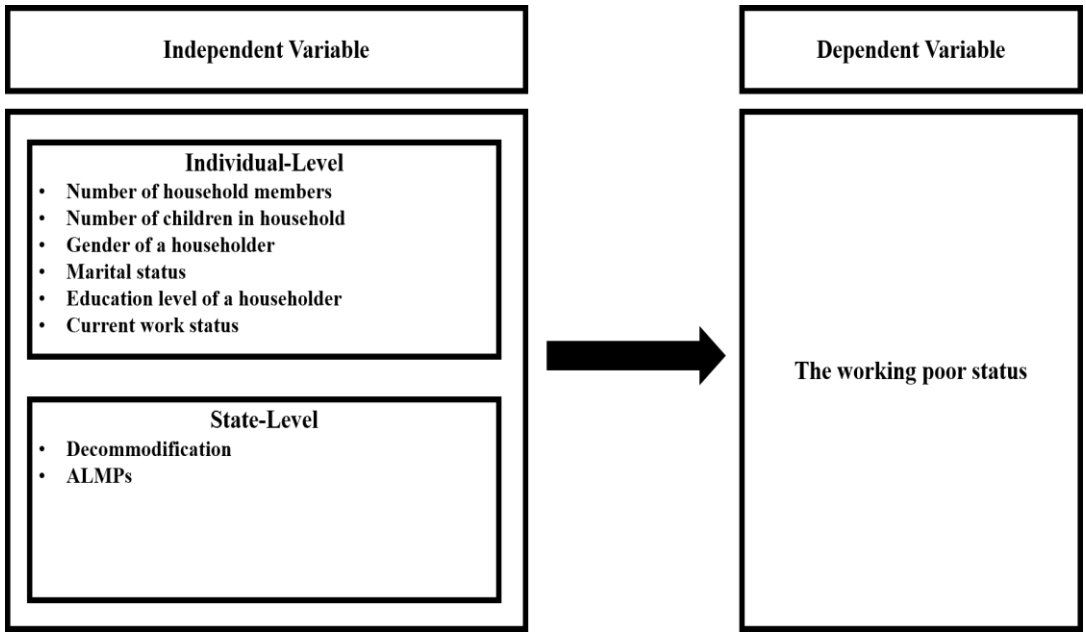
Research Hypotheses

1. Individual-level factors (gender, education, marital status, number of household members, number of children, and current employment status) will significantly affect the likelihood of being the working poor.
2. State-level factors (e.g., decommodification and Active Labor Market policies) will significantly affect the likelihood of being the working poor.

Research Model

Considering the literature review, the research model is presented in Figure 1.

Figure 1. Research model



CHAPTER 2

LITERATURE REVIEW

A Definition of the Working Poor

The definition of the working poor in individual countries is disputable (Hong, 2005; Crettaz, 2013), partly because most countries have different economies, social systems and structures, have varied definitions of labor force, and different poverty thresholds. Given these variabilities, it is still critical to operationalize the working poor by individual country. The classifications of *'who works'* and *'who is poor'* are also different (Crettaz, 2011). For this reason, most researchers use a range of definitions for working poor classifications. They recognize that each country has its own definition of who they classify as the working poor. As seen in Table 1, there are varied definitions for the working poor in several countries.

Table 1. The various definitions of the working poor

Country	Source & author (s)	Work definition	Poverty threshold
United States	Bureau of Labor Statistics (BLS)	People who spent at least 27 weeks in the labor force	The official poverty line
	Thiede et al. (2015)	Workers are defined as individuals working 27 or more weeks during the past year	One-half (50%) of the U.S. median household income[6]
Canada	Azarpazhooh & Quiñonez (2015)	Working 20 or more hours per week	Annual family incomes less than $34,300 (Canadian dollar)
United Kingdom	Hick & Lanau (2017)	People who are currently employed have also been employed for 7 or more months of the preceding year.	Threshold set at 60% of median income

[6] According to Thiede et al. (2015), such median income is rarely used as threshold of the working poor in the U.S. because the previous studies on the working poor in the U.S. have been used an official poverty line.

Country	Source & author (s)	Work definition	Poverty threshold
Sweden	The Swedish Statistics on Income and Living Conditions	The person must have been in work at least 7 months during the calendar year	A disposable income per consumption unit after below 60% of the median income
France	INSEE/National Action Plan for Social Inclusion 2001-2003/2003-2005	Working at least 6 months during a year	Less than 50% of the median income
Switzerland	The Swiss Federal Statistical Office	People aged 18 or over who had a full-time or part-time job for more than half of the calendar year and who live in a poor household	60% of the median equivalized household income
Hong Kong	Cheung et al. (2019)	A worker was defined as an individual who had been working for at least 6 months in the prior year.	Half (50%) of the median equivalized household income
International Labour Organization (ILO)	ILO (2019)	At least 1 hour per week	$1.25 (extreme working poverty)/$2 (moderate poverty)
European Union	Eurostat	Employed is defined as being in work for half of the year	An income below 60% of the national median

Source: Azarpazhooh & Quiñonez (2015), Cheung et al. (2019), Crettaz (2013), Hick & Lanau (2017), ILO (2019), Thiede et al. (2015)

Utilizing Gammarano's (2019) definition, this study used the following classifications: (1) Absolute international poverty line of US$ 1.90 per person per day at purchasing power parity (PPP), and (2) relative poverty line that is 60% of the median income. Consistent with this classification, this study examined factors that may impact poor people or working class' disposable income a cross countries. Moreover, the definition of the working poor in this study assumed that at least one member in the household was employed. According to Schiller (2003), the amount of time the employed person can be measured in two ways: (1) the number of employed weeks in a year, and (2) the number of employed hours per week. Therefore, it applied

the relative poverty line for the working poor, i.e. people who worked 20 hours per week for a year in the labor force, but whose incomes fall below 60% of median household income.

Disposable Income

Poverty is highly related to socio-demographics, political economy, economics, cultural, and structural factors (Alper et al., 2019; Brady, 2019; Crettaz & Suter, 2013). Income measurement[7] is often the primary indicator to measure an individual's living standards (Pradella, 2015). Broadly, this study used the United Nations (UN) definition of poverty, which implies a lack of income related to the population's standard of living specific to a country (UN, 1998). It focuses on the disposable income of individuals, which includes in-kind income components involving cash transfers, e.g. health care, and education; deducted transfers paid, e.g. employee's social insurance contribution, taxes on income, and regular interhousehold cash transfer paid (Decancq et al., 2014).

Welfare State Characteristics

The welfare state can be defined through the different historical, political, and economical experiences. In Kaufmann's study (as cited in Jakobsen, 2011), the term *"welfare state"* refers to the Scandinavia countries—these countries were commonly referred to as Nordic countries, or Northern Europe—in the early 1930s. This system of arrangement was a general discourse discussed in most countries after World War II. The historical upheaval that unrevealed after the second half of the 20th century, influenced diverse systems—geopolitical, economic, political, and social hegemonic arrangements—in the worldwide systems. The market

[7] A concept of consumption expenditure can be also employed to measure a poverty, but it has a disadvantage that is relatively difficult to measure the poverty than income (Attanasio & Pistaferri, 2016). Moreover, the target population in this study is the working poor, so it is highly related to working period and annual income below the poverty threshold. Hence, to take advantage of income indicator is more appropriate for the proposal rather than consumption expenditure.

failures under capitalism, i.e. the economic situation of an inefficient distribution of goods and services in the free market system, have heightened the emergence of new social risks affecting citizens. Therefore, many scholars and policymakers have sought to identify solutions to the market failures, arguing that the solutions to these failures might be welfare state solutions (Esping-Andersen, 1990; Titmuss, 1974). Along with this, the citizens and states have recognized the importance of a state intervention to remedy the inevitable market failures (Barr, 2012).

Many researchers define a welfare state differently. Esping-Andersen (1990) contends that "the welfare state involves state responsibility for securing some basic modicum of welfare for its citizens" (pp. 18-19). Barr (2012) states that a welfare state exists to enhance the welfare of the citizens based on the activities of the state, such as covering cash benefits, health care, and education. Sinn (1995) defines it "as an insurance device that makes lifetime careers safer, increases risk taking and suffers from moral hazard effects" (p. 495). Svallfors (2004) describes it as "redistributes resources and life chances, and regulates risks stemming from market dependency" (p. 119). In light of the variance in definitions, it is prudent to surmise that the welfare state functions as a safety net for citizens against any social or economic risk, ensuring that states maintain a decent quality of life through state interventions.

Since countries have different poverty rate, status, and patterns, and different political economies (Brady et al., 2007), it is imperative to put into considerations the historical, political, and economic factors of a given country (Amenta, 1993; De Deken, 2014; Ferragina, 2017). Further, the level of the working poor is different from state to state (Lohmann, 2009). Therefore, the study examined different levels of characteristics that may affect the working poor among various welfare states.

Theoretical Framework

The three worlds of welfare capitalism. The study used Esping-Andersen's framework of the three worlds of the welfare capitalism, which attempts to classify contemporary Western welfare states as belonging to one of three "*worlds of welfare capitalism*". He argues that the modern developed capitalist nations cluster into three main types of welfare states. These are the liberal regimes, conservative-corporatist regimes and social democratic regimes. These three worlds of welfare capitalism have a great impact on the comparative welfare state. In his epoch-making book, *'The Three Worlds of Welfare Capitalism'* (Esping-Andersen, 1990), posits as reported in Art & Gelissen (2010) that the previous research on welfare state ignored the quality of the welfare state; it used correlational approaches, which identified straightforward relationship between levels of social expenditure and levels of welfare state. For Esping-Andersen (1994), "the social welfare state cannot be regarded as the sum total of social policies, it is more than a numerical cumulation of discrete programs" (p. 712). He criticized current social expenditure measures for being incapable of tapping the multidimensional nature of welfare state regimes (Stephens, 2010). His approach deviates from the linear and piecemeal aspects of qualifying a welfare state, equating to *'X equals Y'*—linear relationships. Esping-Andersen framework is radical because it encompassed the historical and political matters, while examining the empirical indicators to the welfare regimes typology and categorizing them into (1) stratification, (2) public and private mix, and (3) decommodification (Arts & Gelissen, 2002).

First, stratification can be described by power resource theory. Power resource theory highlights the struggles among the working class to gain the welfare, power, and entitlement (Pierson, 1996). It contends that the welfare state development can be made as a result of organizing by labor unions or party to gain social democracy and political power (Esping-

Andersen, 1990). Next, there is welfare mix, which focuses on the varying roles of the state, market, and family in welfare provision and managing the social risk (Bambra, 2006). Lastly, the state employs decommodification principles, i.e. "the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation" (Esping-Andersen, 1990, p.37). In other words, it is possible to opt-out of the labor market by achieving decommodification, if a state implemented it correctly. Furthermore, Esping-Andersen (1990) categorized welfare regimes typologies based on stratification, public and private mix, and decommodification with a large and complex body of empirical data "(a) Social-democracy regime, (b) Conservative-corporatist regime, and (c) Liberal regime" (pp. 26-27). Each welfare regime's feature is described in Table 2.

Table 2. Esping-Andersen's three welfare regimes typology

		Social-democratic	Conservative-corporatist	Liberal
Role of	-family	Marginal	Central	Marginal
	-market	Marginal	Marginal	Central
	-state	Central	Marginal	Marginal
Dominant mode of solidarity		Universal	Kinship	Individual
Dominant locus of solidarity		State	Family	Market
Degree of decommodification		Maximal	High for breadwinner/Medium	Minimal
Degree of stratification		Minimal	Medium	Maximal
Prototype country		Sweden	Germany	United States

Source: Esping-Andersen (1990), Esping-Andersen (1999), and Schröder (2013)

Social-democratic welfare regime. The crucial feature of social-democratic welfare regime can be summarized as universalism—generous universal benefits—, to hold office by the left—labor party or working-class party or social democracy party—, a high degree of decommodification, and a low degree of stratification including gender equality (Andersen, 2012; Art & Gelissen, 2010; Esping-Andersen, 1990). According to Kautto (2010), the left power has relevance to "the expansion of legislated social right and in relation to social security

benefits, most social insurance schemes across Scandinavia also had an earning related component which applied universally to all workers" (p. 591). This principle definitively embodies the social right and social-citizenship in social-democratic welfare regime. In social-democratic welfare regime, the eligibilities for a benefit is citizenship that means residence in the state. The state supports the benefits based on citizenship and unconditionally provides such benefits for all citizens (Andersen, 2012). Moreover, the social-democratic welfare regime pursues "equality-oriented through providing standards of public service, equally for all citizens" (Pierson & Leimgruber, 2010, p. 40). It can be said that a system of generous universal and highly distributive benefits in social-democratic welfare regime do not depend on any contributions (Art & Gelissen, 2002). It means citizenship is main entitlement in social-democratic welfare regime that is in harmony with personal needs assessment and individual rights in the reality and to reduce the dependency of women (Kautto, 2010).

Conservative-corporatist welfare regime. The features of conservative-corporatist welfare regime can be summed up as a medium decommodification and stratification level, social insurance based on contribution of employee and employer, and also it highlights the responsibility of the family especially male breadwinner (Andersen, 2012; Esping-Andersen, 1990). These crucial features, particularly social insurance has influenced to the pattern of eligibility and entitlement in conservative-corporatist welfare regime. Male breadwinner model in conservative-corporatist welfare regime promotes the entire family through male household's salary. Therefore, conservative-corporatist welfare regime supports a high level of male household's salary and upholds job stability. However, conservative-corporatist welfare regime discourages the participation of women in labor market, so women's employment rate is lower than social-democratic welfare regime (Jæger, 2006). The mechanism of social insurance relies

on work and full employment. That is, the level of benefits is decided depending on professional status, employment status, and age of its members. Thus, the relatively generous replacement rate of social benefits "guarantees insured individuals a certain level of independence from market in the event of illness or job loss" (Palier, 2010, p. 606). The staple features in conservative-corporatist welfare regime is social insurance that is differentiated by occupation, and medium level of stratification. The social insurance is complicatedly fragmented by occupations. Thus, the value of solidarity is mainly embodied among citizens who have similar socio-economic status in conservative-corporatist welfare regime. Consequently, "a narrow sphere of solidarity related to occupational family structures typical of the countries of continental Europe" (Art & Gelissen, 2010, p. 571). Bismarckian social insurance model led by the state, and the first insurance provided the entitlement of insurance to limited professions, such as public servant. It is evidence that the state founded the class structure as they want, and also it hindered a class coalition (Esping-Andersen, 1990). In consequence, reason why conservative-corporatist welfare regime has medium level of stratification is that the strong fragmentation of social insurance was to limit class coalition and broad level of solidarity. In this way, social rights can acquire from occupation based on reciprocity and contribution. In other words, the basis of entitlement is that a worker should contribute to insurance during employment, and then he or she can get the benefit based on contribution records. On the other hand, the entitlement of women and family members are not required the previous contributions. It means family and social benefits programs do not run as like social insurance program—contribution and reciprocity—, and it is managed by tax financed (Andersen, 2012).

Liberal welfare regime. The primary features of liberal welfare regime can be briefly delineated by low degree of decommodification and high degree of stratification (Andersen,

2012; Esping-Andersen, 1990). The entitlement and eligibility are based on means-tested. It means liberal welfare regime has a weak social right and social citizenship. It focuses on a poor relief orientation and targeted population (Castle, 2010). Moreover, the proportion of selective welfare is high, so the citizens feel shame during means-tested process. Stigma is also very important features in liberal welfare regime. Liberal welfare regime prefers the market solution, so it embodies the primacy of the market. Almost anything factors, such as economic, employment, and as well as social welfare are managed by the market mechanism in liberal regime. The citizens in liberal welfare regimes cannot meet their needs through welfare system and social policy, so they have strong desire for employment. Especially, participation of women in the labor market is encouraged. The labor market is flexibility, so unemployment rate is low and employment rate is high as compared with other welfare regime (Emmenegger et al., 2015). Liberal welfare regime is low level of public expenditure as compared with social-democratic and conservative-corporatist welfare regime. Also, the proportion of public assistance is high, the logic of public assistance is to relieve poor population. The state should not intervene in the outcome of stratification in the market.

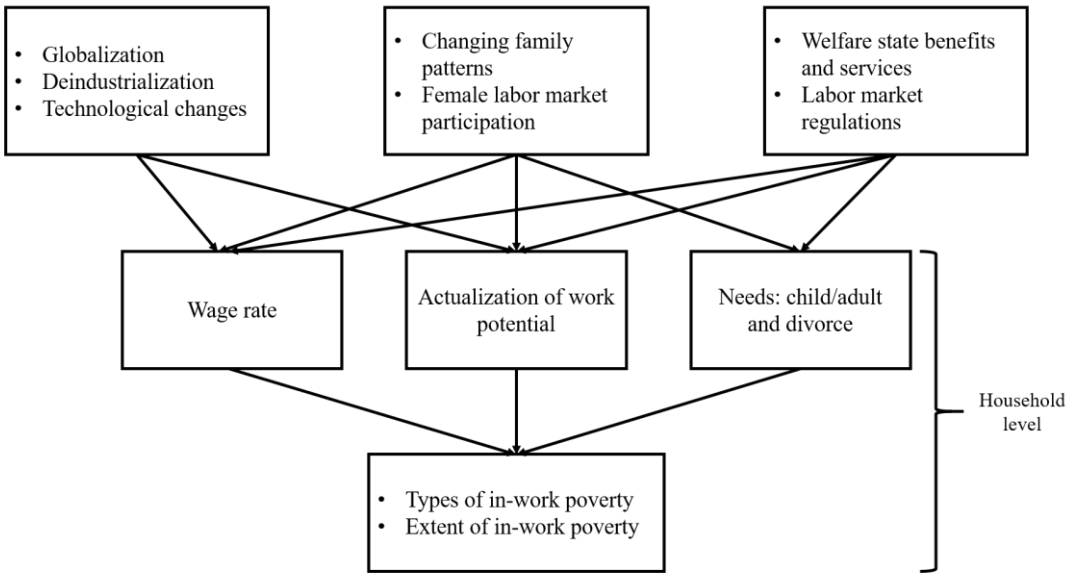
According to Rice (2013), however, “a minimum of three but possibly more welfare regime prototypes can be identified” (p. 94). It means the welfare regimes typology is likely to be expanded more than 3 types of welfare regimes. Therefore, many authors contend that Southern Europe, Eastern Europe, and East Asia can be involved to the welfare regimes typology because Esping-Andersen’s welfare regimes typology has been categorized into the tripolar type using only 18 Western countries (Aidukaite, 2009; Esping-Andersen, 1997; Fenger, 2007; Ferragina & Seeleib-Kaiser, 2011; Rice, 2013). This study, therefore, expanded the welfare regimes to Southern Europe, Eastern Europe, and East Asia.

Mechanism of the working poor. The forms of the working poor should be considered in multidimensional aspects. On a state-level, characteristics of state interventions can influence income, as well as the status of the working poor by enacting social policy and labor market principles (Castles, 2010). However, there are four sources for concern in a macro level economics which have led to the plights of the working poor. These are: (1) globalization, (2) deindustrialization, (3) intensifying international trade, and (4) skill-biased technological changes. All of these sources are threatening the earnings and living standards of the working class in advanced economies (Crettaz, 2013; Marx & Nolan, 2014). Consequently, the working class is likely to fall into poverty because of job loss, lower or unpredictable working hours, and the economic recessions or downturns (Organisation for Economic Co-operation and Development: OECD, 2009). There are other triggers at a micro economic level, such as; (1) low hourly earnings, (2) low labor attachment, and (3) a large number of dependents (e.g., children or the elderly) in the household (Crettaz, 2011; Crettaz & Bonoli, 2010) contributing to poverty. In particular, a large number of dependents may lead to labor detachments; many household members may be required to care for household members and less time at paid work leading to poverty.

Studies on the working poor argue that socio-demographic factors are strongly related to the working poor as well as general poverty, and also these factors have been covered in many researches regarding poverty and the working poor (Brady, 2019; Brady et al., 2010; Halleröd et al., 2015; Marx & Nolan, 2014). In other words, the working poor has the features as less educated, many children or dependents in the household, early experiencing parenthood, and single parent. Those who have these contexts are more difficult to spend much time at paid work and to avoid poverty (Crettaz, 2013). That is, it is clear that socio-demographic factors have

strong explanation power for the working poor. Nevertheless, the previous literatures have identified the relationships and causality between socio-demographics factors and the working poor in individual countries or limited regions or limited countries (Cheung et al., 2019; Giesselmann, 2015; Hick & Lanau, 2108; Van Winkle & Struffolino, 2018). Moreover, socio-demographics factors may be influenced by social policy and labor market institutions in state-level. Therefore, this study identified the relationships between the working poor's socio-demographics factors, and social policy and labor market institutions in state-level based on cross-national generalizability. Considering the both levels factors, the working poor can be influenced by the factors as described in Figure 2.

Figure 2. Mechanism of the working poor



Source: Crettaz (2013)

Figure 2 considers macro-level factors including welfare state benefits and services, labor market regulations as well as, micro-level factors to involve changing family patterns, family compositions, and actualization of work potential. Considering these, this study examined the

association between working poor components related to macro (state) and micro (individual) level factors.

Decommodification and Active Labor Market Policies (ALMPs). Though there are three main indicators—decommodification, stratification, and public private mix—for categorizing the welfare regimes typology in Esping-Andersen's research, the concept of decommodification is the most controversial indicator in the comparative welfare state research (Bambra, 2006; Israel & Spannagel, 2019; Room, 2000; Scruggs & Allan, 2006).

The concept of commodification and decommodification is concerned with Karl Polanyi's work. In his book entitled *The Great Transformation,* Polanyi (1957) stated that the development of industrial capitalism led to the metamorphosis of human labor into marketable goods or '*commodities*'. Hence, decommodification is highly related to involving employed persons whose income is below the poverty line despite being employed. The concept of decommodification in Esping-Andersen's research (1990) is a narrow concept and relies on the Marshall's social rights concept[8] (Papadopoulos, 2005). In other words, the concept of decommodification in his research focuses on protective perspectives based on social rights. Recent literatures (Abu Sharkh & Gough, 2010; Holliday, 2004; Hudson & Kühner, 2010; Hudson & Kühner, 2012; Powell & Barrientos, 2004) claim that social policy based on a narrow definition of social rights has been challenged to lift people from poverty as well as in-work poverty as an environment of socio-economic aspect around the world was changed as compared to the 20th century. The critique is that welfare regimes typology in Esping-Andersen's research (1990) has overlooked the restructuring in the welfare state, such as the changes from income

[8] A narrow definition of social rights is that guarantees just economic security and satisfying, whereas a broad definition of the social rights encompasses justice, satisfying work, self-sufficient, and self-development (Stephens, 2010).

maintenance policy to social services and workfare policy (Powell & Barrientos, 2011). There are also productive dimensions that emphasize the investment in human capital, which boosts economic competitiveness (Holliday, 2000). In line with the arguments above, Powell & Barrientos (2004) argue that Active Labor Market Policies (ALMPs) were more appropriate to estimate the welfare state's ability to response to the social risks in more recent years. ALMPs improve the ability and function of the unemployed person in order to return them to the labor market thus boosting economic competitiveness (Boone & Van Ours, 2004; Crépon &Van Den Berg, 2016; Hudson & Kühner, 2012; Huo et al., 2008).

The purpose of ALMPs is to improve the functioning of labor market through programs, such as public employment services, labor market training and subsidized employment. It supports the unemployed and job seekers by helping the return to work (Boone & Van Ours, 2004). ALMPs are likely to decrease the dependency of income maintenance policies in the job seekers or unemployed, and also it can reduce a financial pressure on individual countries which occurs caused by cash-nexus benefits. It means ALMPs seek a flexicurity, a combination of the words 'flexible' and 'security' (Burroni & Keune, 2011).

Another critique of Esping-Andersen's welfare regime typology is that it neglects the role of welfare state that provides also an actual delivery service like as education, health, social services, in-kind benefits, and labor market policy (Kautto, 2002; Klitgaard, 2007). Although individual countries have almost all types of social policies, there are different emphasis on social policies, social services, and social transfers. Liberal welfare regimes, for example, are marginal role of state in social policy, weakly protective, to spend a little more on welfare services than cash benefits, and low public expenditure; conservative-corporatist welfare regimes are more tend to cash transfers in family policies than welfare services; and social democratic

welfare regimes have high spending on cash benefits and welfare services (Bambra, 2005; Hudson & Kühner, 2012; Jæger, 2006; Rostila, 2007). These differences are not properly mirrored in Esping-Andersen's typology. To utilize the both heterogeneous indicators[9]—decommodification and ALMPs—can be likely to investigate more accurately the welfare state's characteristics and allow to find multi-facet aspects of the welfare state's characteristics. That is, using the both indicators can find diversely influencing factors to the working poor in individual countries and elucidate a transformation of the welfare state's paradigm from welfare to workfare. Therefore, the current study measured the welfare state characteristics through decommodification and ALMPs indicators.

Significance of the Study

This study aimed to fill a gap in the previous literatures by focusing on the most vulnerable persons who, despite being employed, live in households with per capita consumption or income that is below the poverty line, and also live in extreme poverty.

Firstly, the previous literature on the working poor has been limited to: (1) the analysis of the impact of the social policies on the working poor as an explanatory variable (e.g., minimum wage, tax and transfer system, and income support policies). On macro/state level, studies have examined the working poor by per capita income levels, the status of the working poor in general, and the rates of the working poor as outcome variables (Alper et al., 2019; Burtless, 2017; Lohmann, 2008; Marchal et al., 2017); (2) investigation of a mechanism of the working poor in terms of changes industrial structure and labor market environment in a macro/state-level

[9] The reason why this study does not apply all three indicators—decommodification, stratification, and private public mix—is that Esping-Andersen (1990) states "the clustering along our dimensions is both sufficiency clear on single indicators, and is upheld when we cumulate different indicators" (p.88). It means welfare state characteristics can be ascertained using single indicator or to add a different indicator or all three indicators put together.

(Brady et al., 2013; Brülle et al., 2019; Crettaz & Bonoli, 2010; Levanon, 2018; Kim & Lee, 2014; Sim, 2016); and (3) examination of socio-demographic factors at the individual-level of the working poor, such as a lack of skill, job satisfaction, work-life balance, and age (Haar et al., 2018; Lyon, 2018; Marx & Nolan, 2014; Pradella, 2015). Research, therefore, has focused on a single level factors, yet the causes of the conditions for the working poor are multidimensional. Therefore, this study explored the working poor using multidimensional approaches on an individual- and state-level. The novelty of this approach is that the working poor factors are identified comprehensively using multidimensional approaches. It recognizes that the conditions that produce a situation of the working poor, is an amalgam of intertwined and interconnected structural, and individual factors. In addition, the study focused on family composition on individual level, which is likely to influence the labor attachment of the working class. This study, therefore, postulated that the working poor conditions in individual countries are both individual- and state-levels causal factors.

Next, the existing literature on the working poor based on the welfare states is not comprehensive enough to capture the broader context of the variability in the multicultural nature in countries or regions (Asatiani & Verulava, 2017; Jalil & Oakkas, 2019; Lai & Chui, 2014; Minas et al., 2014; Oesch, 2015; Özel & Yıldırım, 2019; Powell & Kim, 2014; Powell et al., 2019; Shinkawa, 2013). The utility of the current study was that it added countries from Southern Europe, Eastern Europe[10], and East Asia, which meets Esping-Andersen's operationalization of a welfare state. Table 3 presented the 25 countries selected for this study.

[10] After collapse the Soviet-Union, Central and Eastern Europe (CEE) has experienced the changes socio-economic and political environment. Especially, when Esping-Andersen's welfare regimes typology released in 1990, CEE countries had still been under communism. For that reason, these countries were out of the spotlight in welfare regimes typology because the researcher in the Western countries could not get data and information about these countries during the Cold war (Aidukaite, 2009). However, data regarding these countries has been released in various datasets, such as the international Social Survey Programmes (ISSP), Social Insurance Entitlement Dataset

Table 3. Target countries in the study

Continental	Countries
Oceania (Antipode)	Australia
	New Zealand
Western Europe	Austria
	Belgium
	France
	Germany
	Switzerland
	United Kingdom
Northern Europe	Denmark
	Finland
	Norway
	Sweden
Southern Europe	Italy
	Spain
	Portugal
Eastern Europe	Czech Republic
	Estonia
	Hungary
	Latvia
	Lithuania
	Poland
	Slovakia
	Slovenia
East Asia	Japan
North America	United States

The inclusion of a larger number of countries is assumed to accurately captures the lived reality of the geopolitical landscape. In addition, for methodological rigor, a sufficient sample size could improve the statistical power for analyses. Therefore, the current study added many countries from the three datasets as available that would allow. Furthermore, it examined significant variables necessary in operationalizing the working poor by including the disposable income of the working poor, and the state level characteristics using cross-sectional data.

(SIED), and Organization for Economic Co-operation and Development (OECD). Therefore, this study added Eastern Europe countries to the analysis.

CHAPTER 3

METHODS

Research Design

Utilizing publicly available secondary datasets from the International Social Survey Programme (ISSP), Social Insurance Entitlement Dataset (SIED), and Organization for Economic Co-operation and Development (OECD), the study examined the problem of working poor across 25 countries. The target population was the working poor, and it was defined as "people who spend 20 hours per week, or more in a year in the labor force, but have incomes fall below 60% of median disposable income". The concept of disposable income is appropriate when considering the working poor status because it involves an in-kind income component, especially social transfers through health care and education. Disposable income also considers deducted transfers paid, such as employee's social insurance contribution, taxes on income, and regular interhousehold cash transfer paid. Decancq and colleagues (2014) suggest that disposable income is an accurate aggregate measure of income.

Next, this study explored the association between individual working poor status, and individual- and state-level factors in the 25 countries. The relationships were probed by Hierarchical Generalized Linear Modeling (HGLM), which allows relaxing of the assumption that error components in the linear predictors of generalized linear models are independent. The Independent variables in state-level were decommodification and ALMPs. The dependent variables in an individual-level were family composition as well as a householder's characteristics.

Data Source

The research questions were answered using three different datasets. To assess the welfare state characteristics at state level factors, SIED and OECD datasets were used. To access the individual-and state-level (hierarchical structure data) relationships among the working poor, ISSP dataset, SIED, and OECD were utilized. Thus, the current study was a cross-sectional study utilizing the most recent datasets (ISSP [2009], and SIED and OECD [2010]). All datasets are publicly available, with ISSP, SIED, and OECD allowing researchers like myself to access the datasets through their microdata platform. The datasets utilized in this study contained non-personally identifiable information and therefore, the study was exempt from the Institutional Review Board (IRB)[11] approval.

Data on welfare states research needs to be collected based on the same questions from all surveyed countries. This is because, even though there could be a slight difference in the content of the questionnaire, the meaning of response may change, and the reliability is likely to be a problem. Therefore, ISSP dataset is one of the few datasets that is good for comparison across countries. Moreover, since the same subjects were repeatedly measured at regular intervals, time series comparison is possible. SIED includes the detailed information about social insurance and pension system across countries, and OECD dataset provides information about labor market policies in OECD countries and in some non-OECD countries. The following section is a description of each dataset.

The International Social Survey Programme (ISSP). The ISSP is a cross-national collaborative dataset that publishes annual datasets on a variety of topics in social sciences, such

[11] According to the email from IRB office in University of Texas at Arlington (C. Morris, personal communication, March 19, 2020), when information / biospecimens are or will be de-identified before a researcher receive/collect them and he/she will not have access to direct/indirect identifying information, this does not constitute human subject research and IRB review is not required.

as the role of government, environment, social inequality, family and changing gender roles, social networks, religion, citizenship, national identity, leisure time and sports, work orientations, and health and health care. ISSP dataset collects the sample using multi-stage stratified random sampling and includes household and person level data on socio-demographic, income, employment status, household composition, and cultural factors. The ISSP dataset includes data from about 57 countries comprising the continents of Europe, North America, Latin America, Asia, and Australasia. All collected data and documentations are available for free access. ISSP dataset has income data on household level variables and allows access to household disposal income levels income. Hence, ISSP dataset is ideal in measuring individual income status of the working poor. This study used a dataset which covered social inequality in 2009 (ZA5400) from ISSP.

Social Insurance Entitlement Dataset (SIED). SIED (formerly known as SCIP: Social Citizenship Indicator Program) is a continuation of the SCIP which includes the 18 developed countries and denote fourteen time points: 1930, 1933, 1939, 1947, 1950, and thereafter every fifth year up to 2005 (Social Policy Indicators: SPIN, 2020). SIED conducts data collection beyond 2005 for the 34 countries. It provides systematic data on characteristics of social insurance programs from 1930 to 2015 every 5 years. The SIED dataset was ideal to measure the decommodification, social insurance generosity, and pension generosity for this study. SIED provides: (1) replacement rates in single and family levels, (2) coverage ratio as a proportion of labor force, (3) the number of legislated administrative ‘waiting days’ of unemployment at the beginning of unemployment spell when no benefits are paid out, (4) the number of weeks during which sickness benefit is payable to single industrial worker with work record as detailed in general information, and (5) the number of weeks of contribution required to qualify for benefit,

made in the course of reference period of unemployment, sickness benefits, and pension programs which are possible to calculate the decommodification scores. SIED makes its dataset based on various resources, such as ILO dataset, OECD dataset, and individual countries' official government sources.

For measurement of pension decommodification scores, an expected pension duration year should be measured which can be calculated by life expectancy at the age of 65 and retirement age for males and females. However, missing cases of life expectancy and retirement age in SIED complemented by ILO social security database and OECD.

Organization for Economic Co-operation and Development (OECD) data. The OCED dataset is on a variety of topics in the world. It allows a measure of the labor market environment and is congruent with the ILO dataset. The Labor market policy (LMP) in OECD provides for public interventions in the labor market to correct for inefficient functioning of the market. Data on public expenditure and LMP interventions are collected from administrative sources annually for European Union (EU) and OECD non-EU countries, with limited exceptions.

Description of Variables

This study posited that the conditions of the working poor were multidimensional involving state level factors and individual-levels factors. Thus, this part describes the variables for the analysis. Table 4 summarized description of variables of interest.

Table 4. Summary description of the variables

Type of variable	Variables	Measurement	Source of data
Dependent variable	The odds to have a working poor status	1: Living below the working poor line 0: Living above the working poor line	ISSP

Type of variable	Variables	Measurement	Source of data
Independent variable			
Household-level	Number of household members	Discrete variable	ISSP
	Number of children	0: No children 1: 1 child 2: 2 children 3: 3 or more	ISSP
	Current employment status	1: Full-time 2: Part-time 3: Less than part-time	ISSP
	Marital status	0: Married 1: Not married	ISSP
	Gender of a householder	1: Male, 2: Female	ISSP
	Education of a householder	1: Low, 2: Medium, 3: High	ISSP
State-level	Decommodification Unemployment insurance Sickness insurance Pension	Continuous	SPIN/SIED, ILO social security database, and OECD
	ALMPs	Percentage of GDP spent on ALMPs	OECD

Dependent variables. The odds of having a working poor status was the dependent variable in this study. The working poor in this study was defined here "those individuals who spend 20 hours per week, or more annually in the labor force, but whose income falls below 60% of median disposable income". It is therefore, dichotomized as individuals with disposable income below 60% of median disposable income, or not falling below 60% of median disposable income. It was composed of a dichotomous variable; 1 = the working poor; and 0 = non-the working poor. As explained above, disposable income is more appropriate to measure the working poor's income because it includes market income, and other cash transfers from state. It excludes taxable income and social contribution. The disposable income can be explained in an equation as follows.

$$\text{Disposable income} = \text{Market Income} + \text{Cash Transfer from State} - \text{TAx and Income} - \text{Related Social Contribution}$$

This study focused on household structure and number of household members. Thus, adjusted disposable income was more appropriate to account for these factors. Adjusted disposable income can be calculated as a formula below.

$$Adjusted\ disposable\ income = \frac{Disposable\ income}{Number\ of\ household^{e}}$$

OR

$$Adjusted\ disposable\ income = \frac{Disposable\ income}{\sqrt{Number\ of\ household}}$$

The value of *e* has range between 0 to 1. An *e* value of 1 indicates that the household size is not to be reflected, and *e* value of 0 also indicates that denominator equals 1. It means that no adjustment was reflected for the household size. In this study applied 0.5 for *e* in accordance with OECD recommendation (Förster, 1994). The reason is that the recent literatures (e.g. Alper et al., 2019; OECD, 2013) compare income inequality and poverty across countries, and apply a scale which divides household income by the square root of household size. For example, the needs of a household of a family of four persons are twice as great as those of a single-person household. There is no different value between adults and children family member.

Independent variables. The independent variables were composed of state-level factors including decommodification and ALMPs; individual-level factors, to include family composition, and householder's characteristics. Firstly, the socio-demographic variables at the

individual level were selected by the mechanism of the working poor as conceptualized by Crettaz (2013). Individual-level variables focused on the family compositions of the working poor. Thus, independent variables on the individual level were family composition (the number of family members in a household, and the number of children in a household), and employment status, gender, marital status, and education level of a householder. Employment status was denotated by full-time, part-time, and less those who were not in the workforce. Especially, those who were not in the workforce referred to individuals helping family members, those who were unemployed, students, those in vocational training, retirees, homemakers, and those who were permanently disabled. Education level was composed of low, medium, and high; (1) Low educational level meant less than upper secondary education completed (including never attended); (2) medium educational level meant upper secondary education completed or post-secondary non-tertiary education; (3) high educational level meant tertiary education completed (including university degree completed and graduate studies)

Decommodification. Although Esping-Andersen is a pioneer in the conceptualization of measuring decommodification, other researchers have hitherto suggested a need for its modification[12] (Bambra, 2006; Scruggs & Allan, 2006). The current study, therefore, utilized a modified measure of decommodification suggested by Scruggs and Allan (2006). Three programs characteristics are recommended and use the following components. For unemployment and sickness programs: replacement rate, duration limit (weeks), qualifying period (weeks), waiting (days), and coverage and for pension: Minimum pension replacement,

[12] Scruggs & Allan (2006) refer to instead of decommodification as ‘benefits generosity’ indices in their study.

standard pension replacement, qualifying period (years), employee funding (%), and pension take-up[13]. The description of the components is described in Table 5.

Table 5. Components of decommodification measurement

Program	Components	Description	Variable name in SPIN/SIED
Unemployment insurance	Replacement rate (single) Replacement rate (family)	Average net replacement rate for 26 weeks (single and family)	uz4ind
	Duration limit (weeks)	Number of weeks during which unemployment benefit is payable to single industrial worker with work record as detailed in general information	uduratio
	Qualifying period (weeks)	Number of weeks of contribution required to qualify for benefit, made in course of reference period	ucontper
	Waiting (days)	Number of legislated administrative 'waiting days' of unemployment at beginning of unemployment spell when no benefits are paid out	uwaiting
	Coverage	Unemployment insurance coverage ratio as proportion of labor force	ucovratl
Sickness insurance	Replacement rate (single) Replacement rate (family)	Average net replacement rate for 26 weeks (single and family)	sz4ind
	Duration limit (weeks)	Number of weeks during which sickness benefit is payable to	sduratio

[13] Pension take up is "an estimate of the portion of those above retirement age who are in receipt of a (public) pension" (Scruggs, 2014, p. 9).

Program	Components	Description	Variable name in SPIN/SIED
		single industrial worker with work record as detailed in general information	
	Qualifying period (weeks)	Number of weeks of contribution required to qualify for benefit, made in course of reference period	scontper
	Waiting (days)	Number of legislated administrative 'waiting days' of sickness at beginning of sickness spell when no benefits are paid out	swaiting
	Coverage	Coverage ratio as proportion of labor force	scovratl
Pension	Minimum pension replacement	Single	pnermisi
		Couple (100%/0%)	pnerswsi
	Standard pension replacement	Single	pnermico
		Couple (100%/0%)	pnerswco
	Qualifying period (weeks)	Number of weeks of contribution required to qualify for benefit, made in course of reference period	pcontper
	Employee funding (%)	Total proportion of insurance fund receipts derived from contributions by the individuals insured.	pfininsr
		Total proportion of insurance fund receipts derived from employer contributions	
	Take-up	Share of pensioners in population above normal pension age	pturatpa

Source: SPIN/SIED codebook

This study used two types of pension replacement rate; (1) the minimum pension, payments above the standard retirement age based on (usually) means-tested, regardless of work history, and (2) the standard pension, payments to someone who earned the labor market wage, and contributed into a pension fund through their working life. Therefore, pension replacement rate, and programs replacement rates are payment ratios after-tax benefits. The two programs include duration limit, waiting days, and the qualifying period. Shorter qualifying periods and waiting days; or longer benefit durations imply greater decommodification.

The current study calculated decommodification score[14] using a standardized Z-score. The formula for Z-score is as follows.

$$Z\text{-}score = \frac{Value_{kn} - meanValue_{kn}}{Standard\ Deviation_{kn}}$$

Where:

k = program characteristic

n = country

However, because Z-scores calculated waiting days, benefit qualification weeks, pension qualification years, and employee funding ratio for the decommodification index, it was necessary to multiply these factors for the following reasons: -1. The long waiting days, benefits qualification weeks, pension qualification years, and high employee funding ratio, do not mean that a social policy was generous. Rather, these long waiting days, benefits qualification weeks, pension qualification years, and high employee funding ratio negatively affect decommodification score.

[14] Generally, decommodification score ranges from 0 to 100.

Next, the Z-scores for some program characteristics were based on logged values. The reasoning was to transform the non-zero values, which followed a log normal distribution. To prevent the decommodification scores being a negative number (value), the value of 12.5 was added to make the sum in brackets take a minimum value of 0. The formula for the both programs is as follows:

$$\text{Insurance program decommodification}$$
$$= [2 \times Z(benefit\ replacement\ rate) + Z\{ln(benefitduration\ weeks)\}$$
$$+ Z\{ln(benefit\ qualification\ weeks)\} + Z(waiting\ days) + 12.5]$$
$$\times insurance\ coverage$$

The formula for the pension is as follows:

$$\text{Pension decommodification}$$
$$= \{Z(standard\ pension\ benefit\ replacement\ rate)$$
$$+ Z(minimum\ pension\ benefit\ replacement\ rate)$$
$$+ Z(expected\ pension\ duration\ years)$$
$$+ Z(standard\ pension\ qualification\ years)$$
$$+ Z(employee\ pension\ funding\ ratio) + 12.5\} \times pension\ take\text{-}up\ rate$$

The formula for the overall decommodification score is as follows:

$$\text{Overall decommodification score} = \text{Unemployment insurance decommodification score} + \text{Sickness insurance decommodification score} + \text{Pension decommodification score}$$

Decommodification scores were calculated using Statistical Package for the Social Sciences (SPSS) version 22.

Active Labor Market Policies (ALMPs). ALMPs are government programs that intervene in the labor market to help the unemployed find work. The share of public expenditure on ALMPs is measured as a percentage of Gross Domestic Product (GDP) in individual countries. The current study used ALMPs as an indicator of the spending effort of active labor policies in the selected countries. ALMPs expenditures are social policy directions in individual countries to signify, the extent of welfare state and welfare regimes typology. ALMPs in OECD dataset are categorized into two types: Active measures and passive measures. Active measures are related to active labor market polices, such as public employment services and administration, training, employment incentives, sheltered and supported employment and rehabilitation, direct job creation, and start-up incentives. Passive measures concern income maintenance policies, such as out-of-work income maintenance and support and early retirement. This study employed only active measures components in Labor Market Policies (LMPs) because passive measures components[15] in LMPs be captured in the decommodification scores. In the Table 6 described the components of ALMPs.

[15] Passive measurement components include unemployment insurance, early retirement benefit, and redundancy compensation which is cash-benefits for the worrer. However, in this study, decommodification score already captured the cash-benefits for the laborer. The passive measurement components were excluded from the ALMPs expenditure. In other words, this study only focused on the active aspects on LMPs.

Table 6. Composition of ALMPs

Category	Sub-category	Description
Public employment services and administration	Placement and related services	Placement and related services include open information services, referral to opportunities for work, training and other forms of assistance, counselling and case management of jobseekers, financial assistance with the costs of job search or mobility to take up work, and job brokerage.
	Benefit administration	Benefit administration expenditure includes the budget of institutions that manage the unemployment and early retirement benefits reported, if this spending can be separately identified.
Training	Institutional training	Programs where most of the training time (75% or more) is spent in a training institution (school/college, training center or similar).
	Workplace training	Programs where most of the training time (75% or more) is spent in the workplace.
	Alternative training (formerly called Integrated training)	Programs where training time is evenly split between a training institution and the workplace.
	Special support for apprenticeship	Programs providing incentives to employers to recruit apprentices from labor market policy target groups, or training allowances for particular disadvantaged groups.
Employment incentives	Recruitment incentives	Recruitment incentives are programs making payments for a limited period only to facilitate the recruitment of unemployed persons and other target groups into jobs

Category	Sub-category	Description
		where the majority of the labor cost is covered by the employer.
	Employment maintenance incentives	
	Job rotation and job sharing	
Sheltered and supported employment and rehabilitation	Sheltered and supported employment	
	Rehabilitation	
Direct job creation		The programs create additional jobs for the long-term unemployed or persons otherwise difficult to place (usually of community benefit or socially useful, and usually in the public or non-profit sector although similar projects in the private sector may also be eligible).
Start-up incentives		Programs that promote entrepreneurship by encouraging the unemployed and target groups to start their own business or to become self-employed.

Source: OECD (2019)

Statistical analysis

Descriptive analysis. For descriptive analysis, the study identified the descriptive patterns of the study sample on level-1, and level-2. Secondly, in order to identify the variation in working poor rates between countries and welfare regimes, the working poor rate was described per country and welfare regimes. Specifically, it followed Esping-Andersen's welfare regimes typology categorization. Thirdly, to estimate how dissimilar decommodification scores and ALMPs expenditures among countries and welfare regimes, decommodification scores and ALMPs expenditures were elucidated as per countries and welfare regimes. Next, decommodification scores and ALMPs expenditures were explained by countries and welfare

regimes in scatter plot. Finally, the correlation between the working poor, decommodification score, and ALMPs expenditure was described. Descriptive analysis was conducted by SPSS version 22.

Hierarchical Generalized Linear Modeling (HGLM). The individuals and the social groups, such as a student in school, people in community, and citizens in a country can be configurated as a hierarchical structure of individuals nested within groups, while individuals and groups are categorized separately (Bell et al., 2019; Hook et al., 2010). In the hierarchical data, within group membership is likely to have similar characteristics, while between groups are likely to have different characteristics. The reason for the difference is that respondents from the same cluster are likely to share commonalities. The traditional statistical methods, such as Ordinary Least-Squares (OLS) regression assume that observations are independent of each other. Analyzing hierarchical structure data by the traditional OLS regression and the relatedness among respondents, therefore, can underestimate a standard error under the traditional statistical assumption, as well as inflating Type I errors (McCoach, 2010). Multilevel modeling or Hierarchical Linear Model (HLM) allow for comprehensive analyses of data at different levels (Bryk & Raudenbush, 1987; Kim et al., 2010). HLM can also concurrently probe into relationships within and between hierarchical levels of grouped data. Specifically, HLM analyzes hierarchical structure data based on both between- and within-cluster variability for an outcome variable of interest (McCoach, 2010). Thus, variance among variables at different levels can be explained more efficiently using HLM than other existing statistical methods (Woltman et al., 2012). HLM is appropriate to analyze continuous and normally distributed dependent variables. Because the dependent variable in this study is the working poor status, a dichotomous variable

was used. Consequently, the study conducted a hierarchical Generalized Linear Modeling (HGLM).

Fixed and random effects are critical methods in HLM and multilevel modeling, including HGLM. Fixed effects are the only levels of a variable that analysts are interested in a study. In other words, the analysts test a statistical significance in sample data through fixed effects. Therefore, it can be expressed and interpreted by regression coefficient (Snijders & Bosker, 2012). Random effects are a subset of the total possible levels of a variable where the analyst is interested in generalizing levels that are not observed (Bell et al., 2019). Random effects can be estimated as residual for each of level-2 units. It is proper to use fixed effects and random effects to identify the significance and direction of the relationship between- and within-groups in accordance with the research questions.

This study conducted the analysis with all three datasets for the 25 countries. Data from 25 countries were merged into one file containing 18,183 individuals. To get appropriate statistical power according to Kreft (1996), HLM requires at least 30 groups in 2-level, each with at least 30 people (total: 900 individuals in 1-level). However, if 1-level has sufficient sample size, level-2 can be smaller than 30 groups (Yu, 2006). Centering is an important method for HLM. The independent variables in level-1 were composed of binary, categorical, and ordinal. Similarly, the dependent variable is binary (dummy) variable. Therefore, the intercept = 0, is meaningless. Thus, the independent variables in level-1 applied group-mean centering in this analysis in order to improve the interpretation of the main effect, and level-2 variable applied grand-centering. Grand-mean centering is the overall mean of the variable is subtracted from all scores. Therefore, new score captures a country's standing relative to the full sample (McCoach, 2010).

In order to address missing data, Madley-Dowd and colleagues (2019) indicate if missing data is above 5%, it might affect the results. To address this, deletion is one of the recommended methods; however, deletion results in the loss of many cases for hierarchical structure data (McCoach, 2010). The current study had 11.5% of missing data. In multilevel modeling, there are two methods for handling missing data. These methods are Multiple Imputation (MI), and Maximum Likelihood (ML). This study chose to employ MI because multiple imputation has a number of advantages: (1) it produces unbiased estimates, thus providing more validity than ad hoc approaches to missing data; (2) it also uses all available data, and therefore preserves sample size and statistical power; (3) it may also be used with standard statistical software; and, (4) results are readily interpreted (Grund et al., 2018).

Building model. Multilevel models are built sequentially, and each analyst takes a slightly different approaches to build multilevel modeling depending on their theoretical framework (McCoach, 2010).

First, an unconditional model was identified which contains no predictors (independent variables). The purpose of unconditional model is to obtain estimates of the level 1 and level 2 variance components for comparison and to estimate the Intraclass Correlation Coefficient (ICC) (McCoach, 2010; Woltman et al., 2012). ICC value indicates between-group variability and is generally between 0 and 1[16], while 1 − ICC value indicates within-group variability. Therefore, higher ICC values indicate between-group variability is greater than within-group variability. Based on ICC value, analysts can determine whether a hierarchical structure data needs to conduct multilevel modeling or not. In other words, if ICC value is close to 0, there is little or no variance between-group variability, and multilevel modeling is not needed. ICC can be computed

[16] According to McCoach (2010), ICC typically range from 10% to 20% and above 50% is not uncommon.

from the variation between countries, τ_{00}, and the within group variation of individual-level effects, $\pi^2/_3$, using the following equation.

$$ICC = \frac{\tau_{00}}{\tau_{00} + \frac{\pi^2}{3}}$$

Since the dependent variable in this study was dichotomous variable, and in order to predict its value, a probability estimate was considered in the statistical model. Probabilities can only have values between 0 and 1. Therefore, the link function (logit) was used to transform the predicted probability values into variables that are observable throughout the real number form. An equation for unconditional model is as follows.

Unconditional model

$$Prob(working\ poor_{ij}|\beta_j) = \emptyset_{ij}$$

$$Log[\emptyset_{ij} / (1 - \emptyset_{ij})] = \eta_{ij}$$

$$\eta_{ij} = \beta_{0j}$$

where:

$\emptyset_{ij}$= the odds of being the working poor

i= the surveyed household

j= the country

η_{ij}= the logarithm of the odds ratio for the *i*th household in the *j*th country

β_{0j}= the average relative odds ratio of being the working poor in the *j*th country

Conditional model: Model 1. The first research question in this study is "what are individual-level factors (e.g., gender, education, marital status, family composition, and current employment status) affecting the likelihood of being the working poor?". In order to address the first research question, a preferable modeling was developed to sequentially set the model and test the suitability of the model. That is, the model building in this study applied a top-down approach, starting from unconditional model, the model was gradually expanded. In more detail, the current model assumed that individual level factors equally affect the odds of being the working poor across the 25 countries, but there might be differences on the odds of being the working poor by country. Specifically, country differences would determine whether the effects of individual-level variables on the odds of being the working poor were statistically significant.

In terms of the explanatory power of the models[17], multilevel model analysis commonly performs a procedure for selecting or extending a model with a greater explanatory power by conducting ICC analyses and comparing the ICC values of each model (Lee et al., 2016). In other words, model building strategies included gradually estimating more complex models while checking for improvement in model fitting (decreasing ICC value) after each model was estimated (Ene et al., 2015). Conditional model 1 can be expressed as an equation below.

Level-1 Model[18]

$$\eta_{ij} = \beta_{0j} + \beta_{1j}(GENDER_{ij}) + \beta_{2j}(MARITAL_{ij}) + \beta_{3j}(DEGREE_{ij}) +$$

$$\beta_{4j}(WRKST_{ij}) + \beta_{5j}(HOMPOP_{ij}) + \beta_{6j}(HHCYCLE_{ij})$$

where:

[17] According to Huang (2018), A simple way is to compare the reduction in total variance from the unconditional model to the full model.

[18] MARITAL = marital status, DEGREE = education level, WRKST = current employment status, HOMPOP = number of household members, and HHCYCLE = number of children in the household

η_{ij}= the logarithm of the odds ratio for the *i*th household in the *j*th country

β_{0j}= the average relative odds ratio of being the working poor in the *j*th country

$\beta_{1j} \sim \beta_{6j}$= the coefficients of level-1 variables

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

where:

β_{0j}= the average relative odds ratio of being the working poor in the *j*th country

$\beta_{1j} \sim \beta_{6j}$= the coefficients of level-1 variables

μ_{0j}= is the between-group error variance

γ_{00}= the logarithm of the odds ratio for all households in countries

$\gamma_{10} \sim \gamma_{60}$ = the coefficients of fixed effects of level-1 variables

Conditional model: Model 2. The second research question was "what are state-level factors (e.g., decommodification and Active Labor Market policies) affecting the likelihood of being the working poor?" In order to address the second research question, the next model added

the independent variables from level-2 which were decommodification scores, and ALMPs expenditure levels of country GDP. The previous model assumed that the influence on the odds of being the working poor can be different by country. Moreover, if the differences on the odds of being the working poor by country are identified through random effects, the model-2 included the level-2 variables. Therefore, the current model assumed that both decommodification scores and ALMPs expenditure levels of GDP as level-2 variables were important influencing factors of the odds of being the working poor. The model was expressed as an equation below.

Level-1 Model

$$\eta_{ij} = \beta_{0j} + \beta_{1j}(GENDER_{ij}) + \beta_{2j}(MARITAL_{ij}) + \beta_{3j}(DEGREE_{ij}) + \beta_{4j}(WRKST_{ij}) + \beta_{5j}(HOMPOP_{ij}) + \beta_{6j}(HHCYCLE_{ij})$$

Level-2 Model[19]

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(DECOMMO_j) + \gamma_{02}(ACTIVE\_T_i) + \mu_{0j}\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

[19] DECOMMO = decommodification score and ACTIVE_T = ALMP expenditure

Conditional model: Model 3. The final model was to test interaction effects between level-1 and level-2 variables to see a cross-level effect. The cross-level interactions between state-level variables and individual-level variables were included in order to investigate whether the relationship between socio-demographic factors and the odds of being the working poor depended on the welfare state characteristics. The model can be expressed by the following equation:

Level-1 Model

$$\eta_{ij} = \beta_{0j} + \beta_{1j}(GENDER_{ij}) + \beta_{2j}(MARITAL_{ij}) + \beta_{3j}(DEGREE_{ij}) + \beta_{4j}(WRKST_{ij}) + \beta_{5j}(HOMPOP_{ij}) + \beta_{6j}(HHCYCLE_{ij})$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(DECOMMO_j) + \gamma_{02}(ACTIVE\_T_j) + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(DECOMMO_j) + \gamma_{12}(ACTIVE\_T_j) + \mu_{1j}$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}(DECOMMO_j) + \gamma_{22}(ACTIVE\_T_j) + \mu_{2j}$$

$$\beta_{3j} = \gamma_{30} + \gamma_{31}(DECOMMO_j) + \gamma_{32}(ACTIVE\_T_j) + \mu_{3j}$$

$$\beta_{4j} = \gamma_{40} + \gamma_{41}(DECOMMO_j) + \gamma_{42}(ACTIVE\_T_j) + \mu_{4j}$$

$$\beta_{5j} = \gamma_{50} + \gamma_{51}(DECOMMO_j) + \gamma_{52}(ACTIVE\_T_j) + \mu_{5j}$$

$$\beta_{6j} = \gamma_{60} + \gamma_{61}(DECOMMO_j) + \gamma_{62}(ACTIVE\_T_j) + \mu_{6j}$$

Mixed Model

$$\eta_{ij} = \gamma_{00} + \gamma_{01}(DECOMMO_i) + \gamma_{02}(ACTIVE\_T_i) + \gamma_{10}(GENDER_{ij}) + \gamma_{11}(DECOMMO_j * GENDER_{ij}) + \gamma_{12}(ACTIVE\_T_j * GENDER_{ij}) + \gamma_{20}(MARITAL_{ij}) + \gamma_{21}(DECOMMO_j * MARITAL_{ij}) + \gamma_{22}(ACTIVE\_T * MARITAL_{ij}) + \gamma_{30}(DEGREE_{ij}) + \gamma_{31}(DECOMMO_j * DEGREE_{ij}) + \gamma_{32}(ACTIVE\_T * DEGREE_{ij}) + \gamma_{40}(WRKST_{ij}) + \gamma_{41}(DECOMMO_j * WRKST_{ij}) + \gamma_{42}(ACTIVE\_T * WRKST_{ij}) + \gamma_{50}(HOMPOP_{ij}) + \gamma_{51}(DECOMMO_j * HOMPOP_{ij}) + \gamma_{52}(ACTIVE\_T * HOMPOP_{ij}) + \gamma_{60}(HHCYCLE_{ij}) + \gamma_{61}(DECOMMO_j * HHCYCLE_{ij}) + \gamma_{62}(ACTIVE\_T * HHCYCLE_{ij}) + \mu_{0j} + \mu_{1j} * GENDER_{ij} + \mu_{2j} * MARITAL_{ij} + \mu_{3j} * DEGREE_{ij} + \mu_{4j} * WRKST_{ij} + \mu_{5j} * HOMPOP_{ij} + \mu_{6j} * HHCYCLE_{ij}$$

where:

η_{ij}= the logarithm of the odds ratio for the *i*th household in the *j*th country

γ_{00}= the logarithm of the odds ratio for all households in countries

$\gamma_{10} \sim \gamma_{60}$ = the coefficients of fixed effects of level-1 variables

μ_{0j}= the between-group error variance; a normal distribution is assumed; and the variation is equal to τ_{00}

The hierarchical structure datasets made as SPSS files, and HGLM was conducted by HLM 8 software.

CHAPTER 4

RESULTS

Descriptive results

The total sample in level-1/individual was 18,183, and level-2/state was 25 countries. The total sample consisted of 8,917 (49%) males and 9,266 (51%) females. The number of individuals who were married was 10,504 (57.8%) and the number of those who were not married, including divorced, widows, never married, and separated was 7,679 (42.2%). Less than a third of the sample reported a low level of education (32.7%), medium level of education was 44%, and with less than a quarter (23.3%), reporting high. Employment status at the time of data collection was composed of three categories, full-time (n = 13,895, 76.9%), part-time (n = 1,940, 10.6%), and less than part-time which included retirees, students, full-time homemakers, and job seekers (n = 2,348, 12.5%). The average working hours for the sample was 41.45 (Standard Deviation [SD] = 10.39) per week. As mentioned earlier, the targeted population in this study was the working poor. Thus, the reference working hours was over 40 hours per week, which included overtime work. On average, there were 2.82 (SD = 1.37) number of household members; with no children in the household reporting the highest category (60.8%); 1 child (12.6%,), 2 children (15.8%), and 3 or more children in the household (10.8%.). Thus, the typical family composition in this study was the single household type, with no children. Regarding level-2/state-level sample size, there were 25 countries, and a mean decommodification score of 30.89 (SD = 6.21); the mean of ALMPs expenditure of GDP was .628% (SD = .399). Descriptive patterns in individual-and state-level variables are described in Table 7.

Table 7. Descriptive results for variables of interest

Characteristics	N	%, Mean (SD)
Level-1: individual/householder	18,183	
Gender		
Male	8,917	49.0
Female	9,266	51.0
Marital		
Married	10,504	57.8
Not married	7,679	42.2
Education level		
Low	5,937	32.7
Medium	8,002	44.0
High	4,244	23.3
Current Employment status		
Full-time	13,895	76.9
Part-time	1,940	10.6
Less than part-time	2,348	12.5
Number of household member	18,183	2.82 (1.37)
Number of children in household		
0	11,052	60.8
1	2,303	12.6
2	2,873	15.8
3 or more	1,955	10.8
Working hours per week	18,183	41.45 (10.39)
Working poor status		
Working poor	2,009	11.1
Non-working poor	16,174	88.9
Level-2: state	25	
Decommodification	25	30.89 (6.21)
ALMPs	25	.628 (.399)

Note. Decommodification indicates decommodification score which includes social insurance and pension system decommodification scores, and ALMPs indicates ALMPs expenditure of GDP

Level of the working poor

The following is a description of the working poor rate by country and illustrated in Figure 3. The mean value of the working poor rate in all countries was 11.11% (SD = 4.34). Italy had the highest levels of the working poor rate among the 25 countries (18.3%), with Belgium having the lowest (3.7%). Consistent with Esping-Andresen (1990) welfare regimes typology, conservative-corporatist welfare regimes provide generous social insurance programs by

occupations. Western European countries had lower levels of the working poor rate compared to the overall mean. Overall, English speaking countries, such as Australia (15%), United Kingdom (12.2%), United states (18.2%), and New Zealand (11.4%), as well as Southern Europe countries, Spain (14.3%), Portugal (15.6%) and Italy (18.3%) have relatively higher levels of the working poor than non-English speaking countries, such as France (8.7%), Germany (9.6%), and Austria (6.3%). In contrast the Northern Europe countries, such as Denmark (7.7%), Norway (5.8%), Sweden (6.8%), and Finland (6.1%), have comparatively lower levels of the working poor than English speaking and Southern Europe countries. Within Eastern Europe, Hungary has the lowest rate of the working poor (7.2%), with Lithuania having the highest levels of the working poor (16.8%). Correspondingly, there are a wide deviation of the working poor rate within Eastern European countries. This might be because Eastern European countries have undergone welfare state characteristics, and transitions after the collapse of the former Soviet Union. Further, because Eastern European countries have varied welfare regimes and geopolitical alignments, it is debatable whether they can fit one generalized welfare regimes typology.

Figure 3. The working poor rate by country (%)

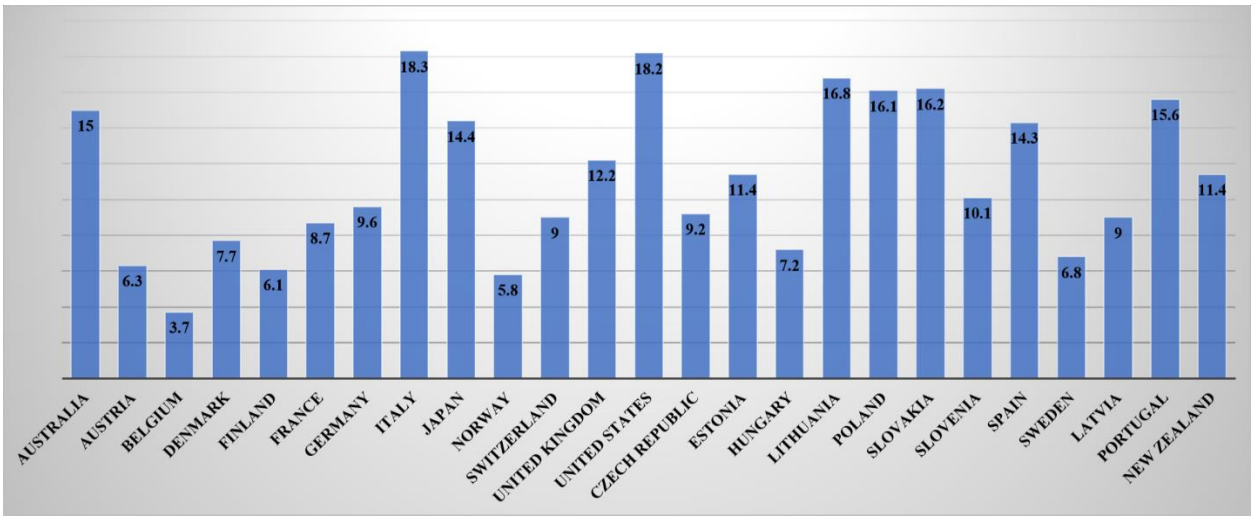
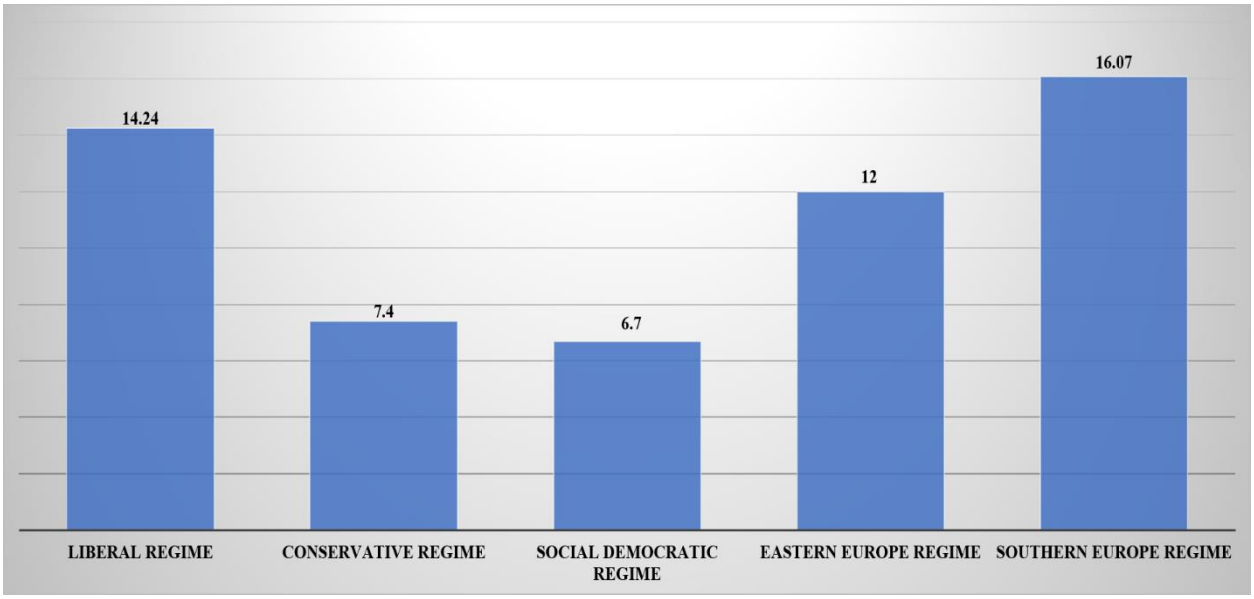


Figure 4 described the working poor rate by welfare regimes. The social democratic welfare regimes had the lowest rate of the working poor among the 5 welfare regimes[20] (6.7%). As mentioned in the literature review, social-democratic welfare regimes encourage citizens participation into the labor market by providing a decent quality of childcare service (Bergh, 2014). Consequently, individuals and families are able to spend much time in the labor market, and more likely to have relatively higher income level than workers in other welfare regimes. On the contrary, Southern Europe welfare regimes had the highest rate of the working poor (16.07%), as well as liberal welfare regimes at 14.24%. A discussion as to why the Southern European countries and English-speaking countries have high working poor rate and their corresponding individual and state factors are discussed on page 80. The conservative welfare regimes had relatively lower working poor rates (7.4%) than liberal, Southern Europe, and Eastern Europe welfare regimes. The expected reason was that conservative welfare regimes focus on employees and support a high level of male household's salary, and they uphold relative job stability. The employees in conservative welfare regimes are likely to maintain a decent standard of living even after losing their job, compared to an employee in the liberal, Eastern Europe, and Southern Europe welfare regimes. Eastern Europe welfare regimes had 12% of the working poor rate.

[20] Esping-Andersen's welfare regimes typology categorizes into three types of welfare regimes (e.g., social democratic, conservative-corporatist, and liberal welfare regimes). However, Arts & Gelissen (2010) argue that even though his original three-worlds typology has empirical and descriptive value, a case can be made for extending the number of welfare state regimes as four or even five (e.g., including Southern and Eastern Europe welfare regimes). Therefore, the welfare regimes typology was categorized into the 5 welfare regimes in this study.

Figure 4. The working poor rate by welfare regime[21] (%) (by Esping-Andersen[22])



Decommodification

As mentioned in the previous chapter, high decommodification scores refer to having relatively generous social insurances and pension systems. Although an employee may lose their job, they still can maintain their living standard. Decommodification score is described by each country in Figure 5. Overall, the mean of decommodification scores in the 25 countries was 30.89 (SD = 6.21). Norway had the highest (44.98), and Spain had the lowest (20.79). The Northern European countries had relatively higher decommodification scores, Finland (40.23), Sweden (36.71), and Denmark (34.75) than other countries in Europe. The English-speaking countries, such as United states (22.72), Australia (22.82), New Zealand (25.15), and United

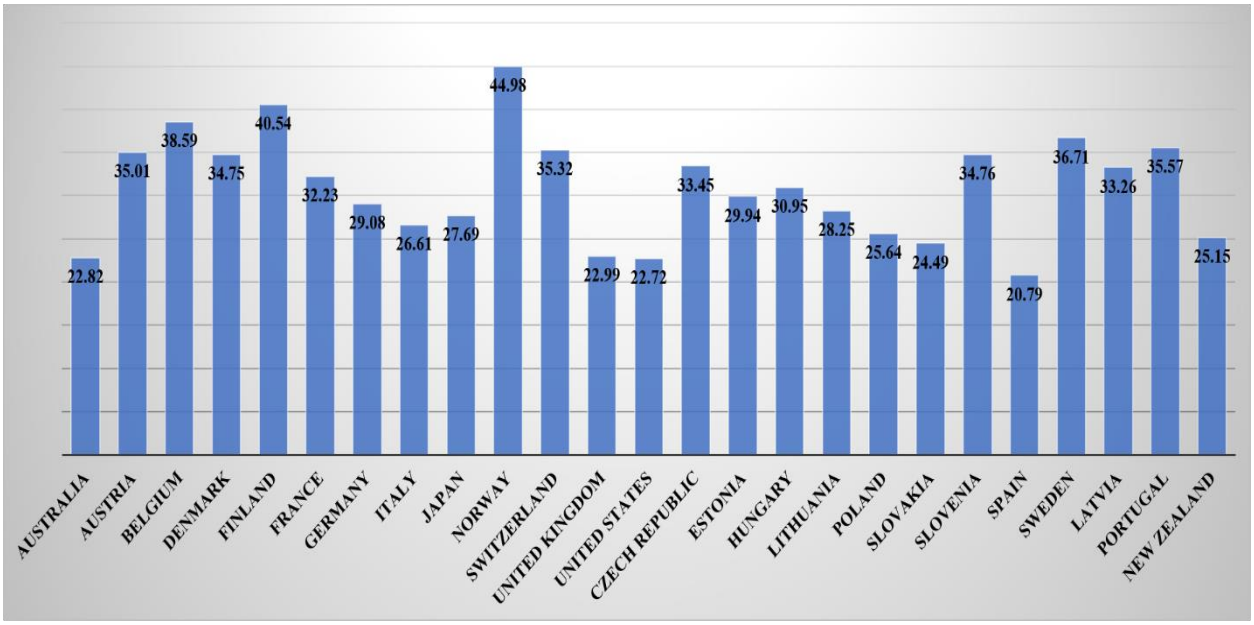
[21] Liberal welfare regimes included Australia, New Zealand, United Kingdom, United States, and Japan. Social-democratic welfare regimes included Norway, Denmark, Finland, and Sweden. Conservative-corporatist welfare regimes included Austria, Belgium, France, Germany, and Switzerland. Southern Europe welfare regimes included Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, Slovenia, and Latvia. Southern Europe welfare regimes included Italy, Spain, and Portugal.

[22] In this study, Japan is only one country from East Asia. Thus, it is difficult to be categorized into East Asia welfare regime. According to Esping-Andersen (1990), there is a marginal role of state and low public expenditure in terms of share GDP spent in Japan. Therefore, Japan is categorized into liberal welfare regimes by Esping-Andersen (1990), and also this study categorized Japan as liberal welfare regimes.

Kingdom (22.99), had comparatively lower decommodification scores. Within the Western European countries, Belgium (38.59) had the highest score, while Germany (29.08) had the lowest score. As identified in the levels of working poor, English speaking countries had higher levels of the working poor and lower decommodification scores, while Northern European countries had lower levels of the working poor and higher decommodification scores.

There is a high variation in the level of the working poor, and decommodification scores, particularly, it was wider within the Eastern European countries. The highest decommodification scores in Eastern European countries was Slovenia (34.76), while the lowest decommodification scores in Eastern European countries was Slovakia (24.49). As mentioned above, within Eastern Europe countries, there was a heterogeneity compared with other welfare regimes countries. Next, decommodification scores in Portugal was higher (35.57) than the overall mean decommodification scores, however, the level of its working poor was relatively high (15.6%).

Figure 5. Decommodification score by country



The decommodification score was composed of three components which were unemployment, sickness, and pension system scores. Governments institute unemployment

programs as cash benefits to compensate for lost wages after a lay-off. Sickness programs are pay outs as cash benefits for the loss of earnings due to illnesses. Pension systems provide resources to former workers who retired or reached the retirement age. The decommodification score was calculated based on programs (unemployment and sickness), and pension generosity. Table 8 described decommodification scores by each country. The mean of each program was 9.24 (SD = 3.05) for unemployment insurance, and 10.01 (SD = 3.81) for the sickness insurance. Pension was 11.64 (SD = 2.59). Norway had the highest decommodification score in 25 countries and the highest unemployment insurance decommodification score (16.05). Switzerland (13.66), Finland (12.18), and Portugal (12.10) had relatively higher unemployment program decommodification score, while Poland (3.61) had the lowest unemployment score in the 25 countries. Italy (5.41), New Zealand (5.68), and Japan (5.71) had relatively lower unemployment scores.

About sickness program, the score in United States was 0. This means that the United States has no sickness program to compensate its citizens for lost wage due to sickness. Although the United States showed a medium level of unemployment program among the 25 countries, its decommodification scores was low because of a lack of sickness programs. All laborers in United States depend on a private sickness and accident insurances. As a consequence, an employee in the United States can find it difficult to maintain a sufficient standard of living if they are unemployed due to illness or accident. It is still a matter of a public debate whether to introduce sickness insurance for workers in the US. Slovenia had the highest sickness program score among the 25 countries, (15.61), followed by Finland (15.50), Norway (15.37), and Sweden (14.17), which are Northern European countries. The English-speaking countries had a below average sickness program score., Australia had 5.19, United Kingdom had 5.51, and New

Zealand had 4.06. Overall, the sickness program score in Eastern European countries were relatively higher compared to English-speaking countries and Southern European countries.

About pension scores, the results were different as compared with the patterns of other programs scores. The mean of all countries was 11.64, SD = 2.59, which was the highest in the components of decommodification scores. Belgium (16.20), and New Zealand (15.41), had higher pension scores among the 25 countries. Even though Northern European countries and Western European countries had comparatively higher pension scores, English-speaking countries: United States (11.05), United Kingdom (11.76), and Australia (11.06), as well as East Asia: Japan (14.21), and Southern European countries: Portugal (14.31) and Italy (13.25) also had above or around average of pension scores. Thus, developed countries seem to have a relatively generous old-age pension system compared to the less developed Eastern European countries. However, Eastern European countries had relatively lower pension score. For example, Slovenia (7.16), Slovakia (8.32), and Hungary (8.39) had below average of pension scores. As parallel with the previous results, the deviation of pension scores within Eastern European countries was greater than within Northern European, Western European, Southern European, and English-speaking countries.

Table 8. Decommodification score by programs and pension

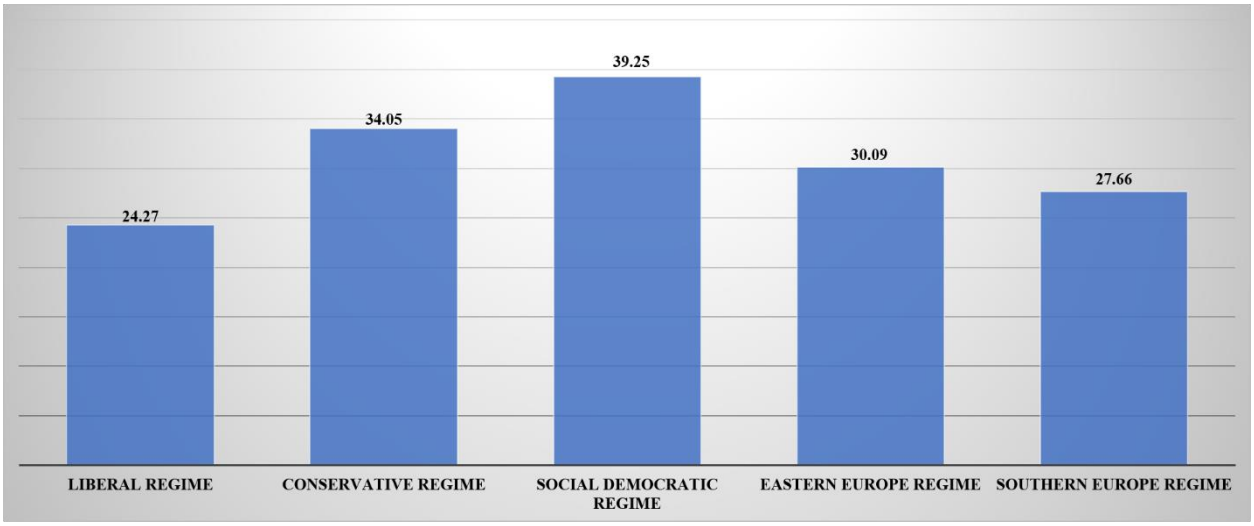
Country	Unemployment	Sickness	Pension	Decommodification
Norway	16.05	15.37	13.56	44.98
Finland	12.18	15.50	12.86	40.54
Belgium	10.73	11.67	16.20	38.59
Sweden	11.46	14.17	11.08	36.71
Portugal	12.10	9.15	14.31	35.57
Switzerland	13.66	10.48	11.17	35.32
Austria	8.27	13.07	13.68	35.01
Slovenia	11.99	15.61	7.16	34.76
Denmark	9.75	11.91	13.09	34.75
Czech Republic	11.54	10.91	10.99	33.45
Latvia	11.63	12.11	9.52	33.26

Country	Unemployment	Sickness	Pension	Decommodification
France	8.39	8.77	15.07	32.23
Hungary	9.82	12.74	8.39	30.95
Estonia	7.95	10.07	11.92	29.94
Germany	9.08	11.10	8.90	29.08
Lithuania	6.47	10.15	11.64	28.25
Japan	5.71	7.77	14.21	27.69
Italy	5.41	7.98	13.25	26.61
Poland	3.61	11.74	10.28	25.64
New Zealand	5.68	4.06	15.41	25.15
Slovakia	6.96	9.21	8.32	24.49
UK	5.71	5.51	11.76	22.99
Australia	6.54	5.19	11.09	22.82
United States	11.67	.00	11.05	22.72
Spain	8.65	6.00	6.14	20.79

Figure 6 elucidated the decommodification score by welfare regimes. Overall, the mean decommodification scores in the 25 countries was 30.89 (SD = 6.21). As mentioned in the literature, Esping-Andersen (1990) argues that Social-democratic welfare regimes have high decommodification score, conservative-corporatist welfare regimes have medium decommodification score, and liber welfare regimes have low decommodification scores. The results in this study parallels Esping-Andersen's welfare regimes typology. Social-democratic welfare regimes (39.25, SD = 4.52) had the highest decommodification scores in all welfare regimes. Liberal welfare regimes (24.27, SD = 2.16) had the lowest decommodification score. Each country in liberal welfare regimes had comparatively lower decommodification scores than the countries in social-democratic and conservative welfare regimes. Conservative-corporatist welfare regimes (34.05. SD = 3.58) had the second highest decommodification scores in the five welfare regimes. Eastern Europe welfare regimes (30.09, SD = 3.75) had the third highest, and Southern Europe welfare regimes (27.66, SD = 7.44) had the fourth highest. The results indicated that social-democratic welfare regimes still have relatively generous social insurance programs as compared with welfare regimes countries. Further, social-democratic welfare regimes had the

lowest number of the working poor and were likely to maintain a decent standard of living with less than the average labor market dependency. The decommodification with social transfers allows the worker to opt out of the labor market after finding a decent job, or maintain a living standard during a job seeking, or hospitalization periods. It affects the changing the incidence of the working poor as well as the composition of the working population (Eurofound, 2017).

Figure 6. Decommodification score by welfare regime (mean)



ALMPs

The ALMPs expenditure are public expenditures as a percentage of GDP. Figure 7 described levels of ALMPs expenditure in the 25 countries. The mean value of ALMPs expenditure in the 25 countries was .63% of GDP (SD = .40). Denmark (2.02%) had the highest ALMPs expenditure level of GDP among the 25 countries, while United States (.13%) had the lowest ALMPs expenditure level among countries with the highest GDP. Just like decommodification scores, Northern European countries had comparatively higher, and above average ALMPs expenditure levels of GDP. For example, Sweden had 1.11%, Finland had 1%, and Norway had .61% of GDP. The liberal welfare regime countries had relatively lower and below average on ALMPs expenditure level of GDP, Australia had .32%, United Kingdom had

.39%, Japan had .28%, and New Zealand had .30%. Overall, Eastern European countries had below average on ALMPs expenditure level as a percentage of their GDP. Estonia had .22%, Lithuania had .31%, Czech Republic had .32%, Slovakia had .33%, Slovenia had .51%, and Latvia had .55%. Within Eastern European countries, Hungary (.63%) and Poland (.69%) were above average on ALMPs expenditure level of GDP. In Southern European countries, Spain (.90%) had the highest, and above the overall mean on ALMPs expenditure level of GDP, whereas Italy (.43%) is the lowest in three Southern European countries and Portugal (.57%) had below the average on ALMPs expenditure level of GDP. The results regarding ALMPs expenditure were similar to the results for decommodification scores. It means that countries with high decommodification scores also had high ALMPs expenditure, such as Denmark and Sweden. Northern European countries and Western European countries invest hugely in ALMPs than English-speaking countries, and Eastern and Southern European countries (Martin, 2014).

Figure 7. ALMPs expenditure of GDP by country (%)

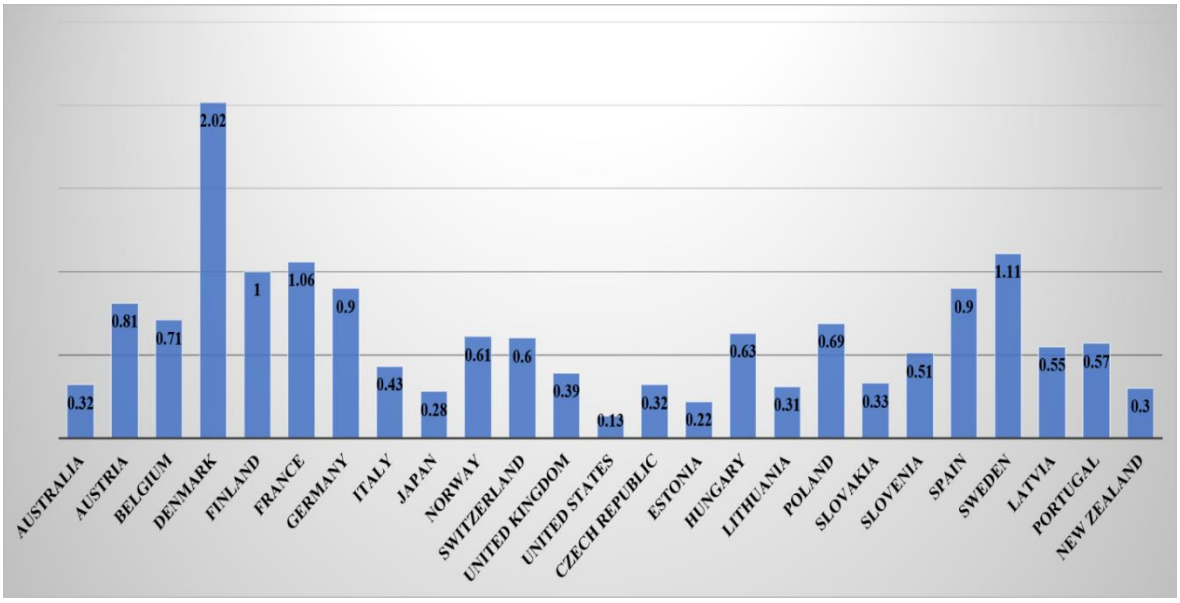


Table 9 described the ALMPs expenditure by subset components. ALMPs expenditure was composed of six components; Public employment services and administration (.16%, SD =

.09), training (.18%, SD = .18), employment incentives (.11%, SD = .11), sheltered and supported employment and rehabilitation (.09%, SD = .13), direct job creation (.06%, SD = .09), and start-up incentives (.02%, SD = .04). The data show that Denmark (.39%) had the highest investments on public employment services and administration, Latvia (.04%), and United States (.04%), were among the lowest invested in public employment services and administration among the 25 countries. Denmark also invested a large portion of its budget in training service (.68%), while Slovakia had the lowest investment on training services (.01%). Sweden had the highest investments on employment incentives (.50%): Portugal and English-speaking countries: United states, New Zealand, Australia, and United Kingdom had lowest investment on employment, .01% respectively. Denmark invested a large portion of budget in sheltered and supported employment and rehabilitation (.64%), but Japan, Estonia, Hungary, Slovenia, and Latvia invested 0% in sheltered and supported employment and rehabilitation. Hungary had the highest investment on direct job creation (.38%), while Denmark, Norway, Sweden, Switzerland, and Estonia invested 0% of GDP in direct job creation. Finally, Spain had the highest investment on start-up incentives (.12%). This could mean that Spain is more likely to encourage and support self-employment, compared with other countries. Overall, Northern European and Western European countries focused on training services. Southern and Eastern European countries focused on employment incentives, and direct job creation. Even though their whole ALMPs expenditure was low, English-speaking countries focused on public employment services and administration. The results indicated that the features in ALMPs can differ by country or welfare regimes.

Table 9. ALMPs expenditure of GDP by subset components (%)

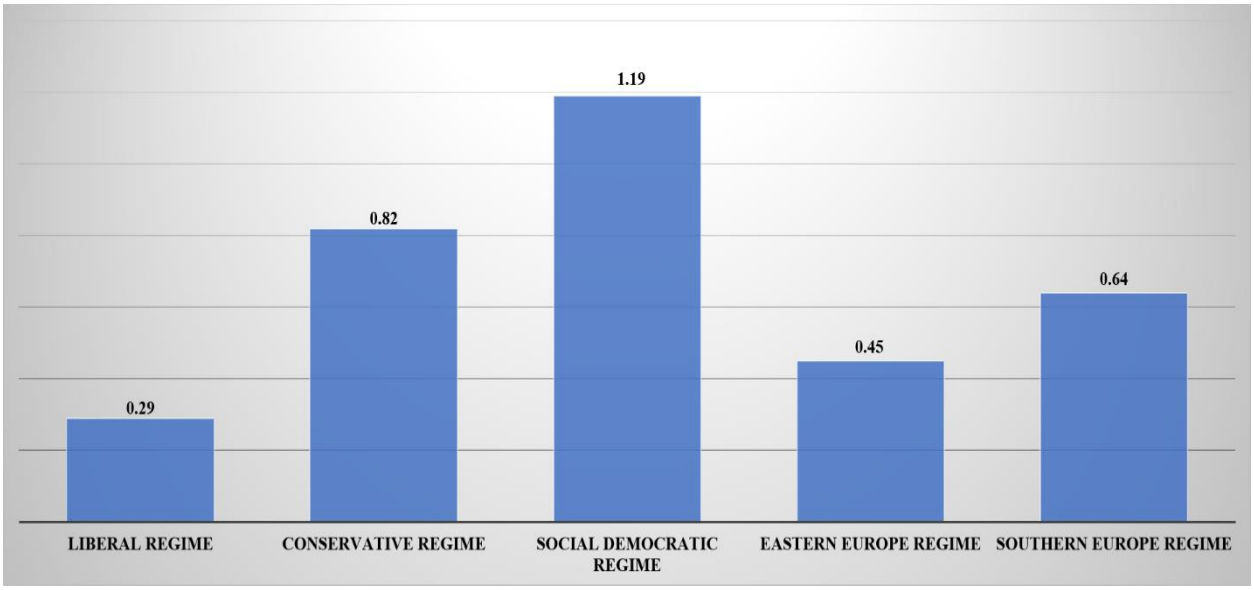
Country	PES	Training	EI	SSR	DJC	SI	ALMPs
Denmark	.39	.68	.31	.64	.00	.00	2.02
Sweden	.27	.10	.50	.22	.00	.02	1.11
France	.30	.33	.07	.11	.20	.05	1.06
Finland	.17	.51	.12	.09	.09	.02	1.00
Germany	.38	.27	.09	.03	.05	.08	.90
Spain	.16	.19	.26	.08	.09	.12	.90
Austria	.18	.50	.05	.03	.04	.01	.81
Belgium	.20	.16	.15	.13	.07	.00	.71
Poland	.09	.04	.21	.21	.04	.10	.69
Hungary	.09	.05	.10	.00	.38	.01	.63
Norway	.13	.21	.10	.17	.00	.00	.61
Switzerland	.11	.20	.07	.21	.00	.01	.60
Portugal	.13	.38	.01	.04	.01	.00	.57
Latvia	.04	.25	.05	.00	.21	.00	.55
Slovenia	.11	.12	.09	.00	.13	.06	.51
Italy	.10	.15	.14	.01	.01	.02	.43
UK	.31	.02	.01	.01	.04	.00	.39
Slovakia	.10	.01	.10	.03	.01	.08	.33
Czech	.11	.04	.05	.08	.04	.00	.32
Australia	.18	.02	.01	.07	.03	.01	.32
Lithuania	.08	.07	.09	.02	.05	.00	.31
New Zealand	.12	.11	.01	.05	.01	.00	.30
Japan	.06	.03	.12	.00	.07	.00	.28
Estonia	.09	.05	.06	.00	.00	.02	.22
US	.04	.04	.01	.03	.01	.00	.13

Note. PES = Public employment services and administration, EI = Employment incentives, SSR = Sheltered and supported employment and rehabilitation, DJC = Direct job creation, SI = Start-up incentives

Figure 8 depicted the ALMPs expenditure by welfare regimes. The findings on ALMPs expenditure of GDP were very similar with the results of decommodification scores and were consistent with Esping-Andersen welfare regimes typology. The mean of ALMPs expenditure per GDP was .63% (SD = .40). Social-democratic welfare regimes had the highest expenditure of their GDP on ALMPs among the five welfare regimes (1.19%, SD = .60), while liberal welfare regimes (.29%, SD = .10) had the lowest expenditure of GDP on ALMPs. Conservative-corporatist welfare regimes had the second highest expenditure of GDP on ALMPs (.82%, SD =

.18), and Southern Europe welfare regimes had the third highest expenditure of GDP on ALMPs (.64%, SD = .24). Eastern Europe welfare regimes had .45% (SD = .17) of GDP on ALMPs expenditure. ALMPs were composed of six subset components that included, job training, employment incentives, and start-up incentives for the self-employed. As mentioned above, each country or each welfare regime had a different feature of ALMPs expenditure. For example, Northern European countries focused on training service, and Southern European countries focused on employment incentives. Therefore, the Northern European countries provide opportunities to find a job or be a job seeker, while Southern European countries provide incentives or cash transfers to those who are seeking work.

Figure 8. ALMPs expenditure of GDP by welfare regimes (%)



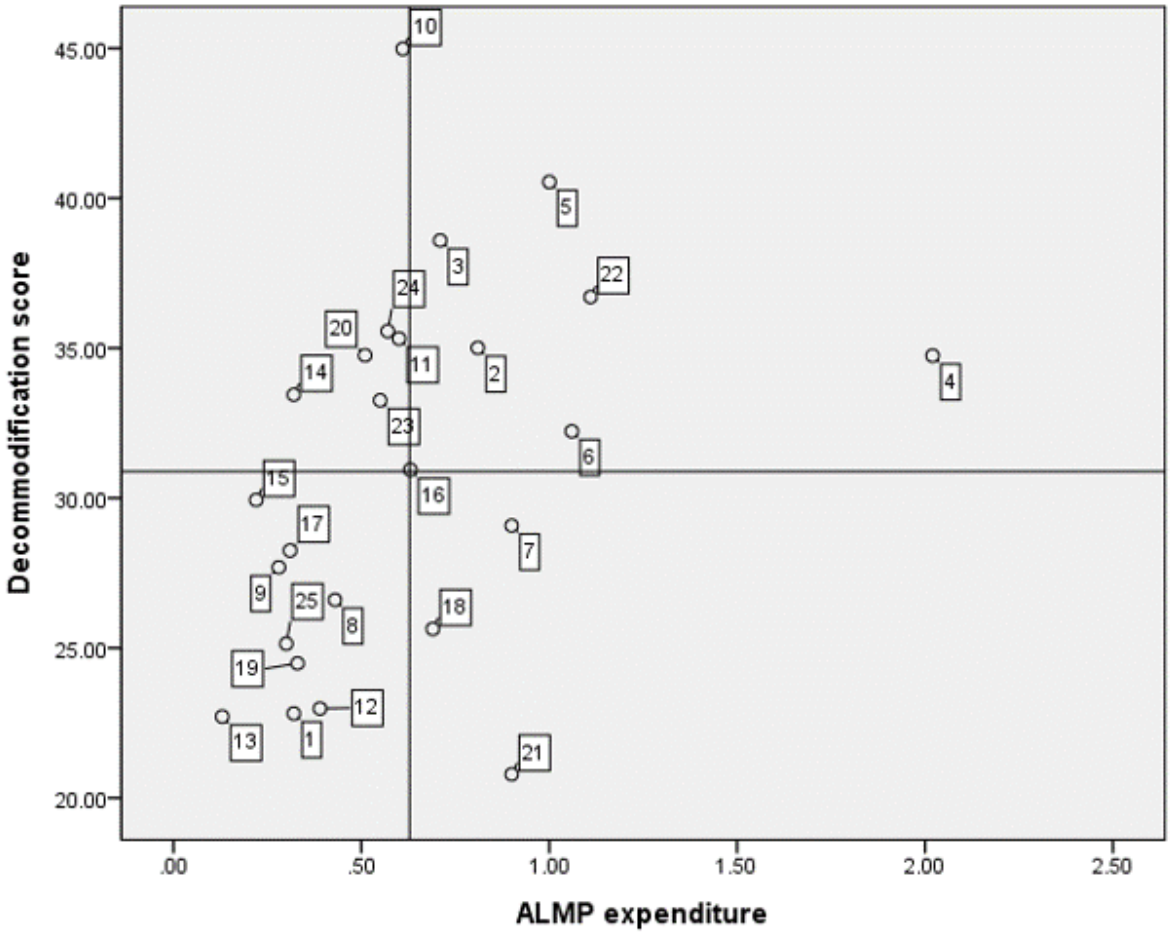
Decommodification and ALMPs

Figure 9 illustrated the plots of the decommodification scores against ALMPs among GDP expenditure levels in 25 countries. It can be interpreted as follows. The countries in the first quadrant had above average decommodification scores, and above average ALMPs expenditure levels of GDP. Countries in the second quadrant had above average decommodification scores

and below average ALMPs expenditure levels of GDP. The countries in the third quadrant had below average decommodification scores and below the average ALMPs expenditure levels of GDP. And the countries in the fourth quadrant had below average decommodification scores, and above the average ALMPs expenditure levels of GDP.

In the first quadrant, there were Denmark, Finland, Sweden, Belgium, Austria, and France. These countries are more likely to have a generous cash-nexus benefits, or social transfers, and high expenditures on service-nexus policies for the working poor. In the second quadrant were Norway, Portugal, Switzerland, Slovenia, Czech Republic, and Latvia. These countries are more likely to have generous cash-nexus benefits or social transfer, but they are less likely to have service-nexus policies for the working poor. In the third quadrant were Estonia, Lithuania, Japan, Italy, New Zealand, Slovakia, Australia, United Kingdom, and United States. These countries are less likely to have generous cash-nexus benefits or social transfer and service-nexus policies for the working poor. In the fourth quadrant were Germany, Poland, and Spain. These countries are less likely to have generous cash-nexus benefits or social transfer, but they are more likely to have service-nexus policies for the working poor. Hungary was located exactly in the middle of plots. It means Hungary had average level of decommodification score and ALMPs expenditure.

Figure 9. Decommodification score and ALMPs expenditure by countries

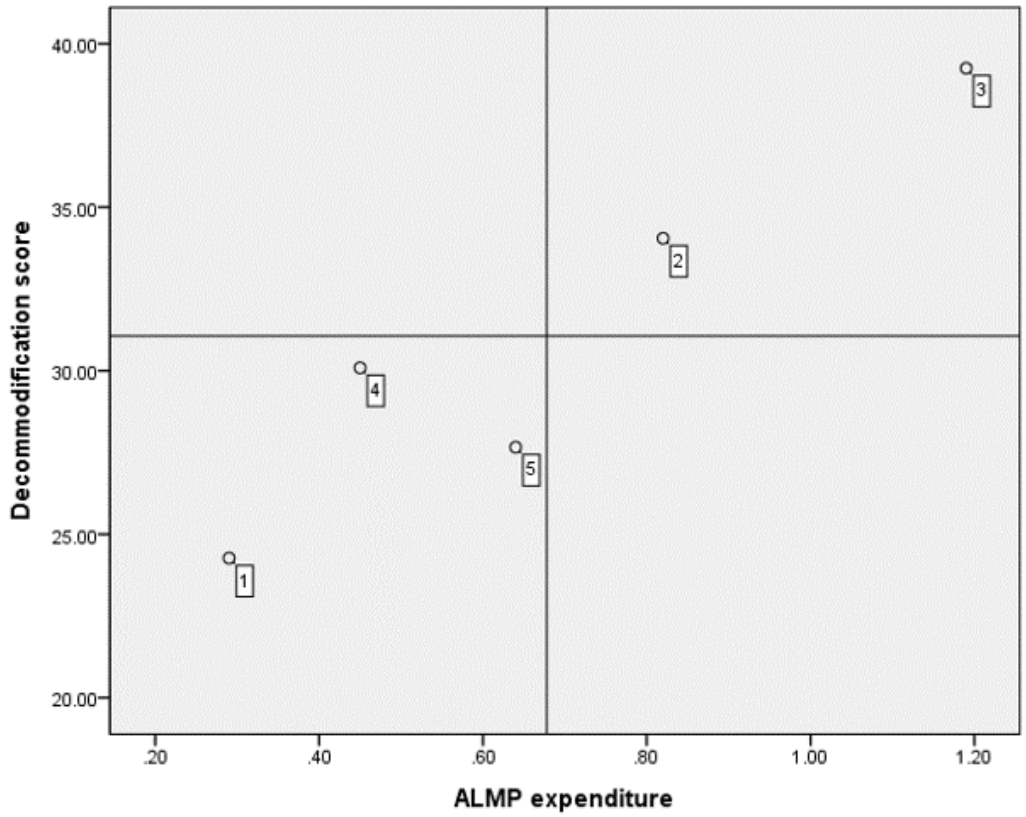


Note. 1. Australia; 2. Austria; 3. Belgium; 4. Denmark; 5. Finland; 6. France; 7. Germany; 8. Italy; 9. Japan; 10. Norway; 11. Switzerland; 12. United Kingdom; 13. United States; 14. Czech Republic; 15. Estonia; 16. Hungary; 17. Lithuania; 18. Poland; 19. Slovakia; 20. Slovenia; 21. Spain; 22. Sweden; 23. Latvia; 24. Portugal; 25. New Zealand

Figure 10 illustrates the plots the decommodification scores against ALMP expenditure by five welfare regimes. The results were clearly divided. Two welfare regimes hold the first quadrant and three welfare regimes were at third quadrant. These results indicated that social-democratic welfare regimes had high decommodification scores and ALMPs expenditure levels of their GDP. Thus, the social-democratic welfare regimes were more likely to provide both generous cash-nexus benefits, and service-nexus policies to the working poor. As described in

the literature review section, decommodification includes cash-nexus benefits, which is a passive-perspectives policy because cash-nexus benefits focus on protective perspectives based on social rights. In contrast, ALMPs, which include service-nexus policies are considered active-perspectives policy because ALMPs are to improve the ability and function of the unemployed—individuals out of work—in order to return them to the labor market that can boost economic competitiveness, such as labor market training, public employment services, and subsidized employment (Boone & Van Ours, 2004; Crépon &Van Den Berg, 2016; Hudson & Kühner, 2012; Huo et al., 2008). Therefore, the social-democratic welfare regimes seem to provide both generous active and passive policies for the working poor. Also, conservative-corporatist welfare regimes were more likely to have generous cash-nexus benefits and service-nexus policies for the working poor. In contrast, Liberal, Eastern Europe, and Southern Europe welfare regimes were at the third quadrant which had low decommodification score and ALMPs expenditure level of GDP. Within the third quadrant welfare regimes had some deviation. The common features of the three welfare regimes were that they were less likely to provide both passive and active policies for the working poor. In other words, liberal regimes, Eastern Europe, and Southern Europe welfare regimes countries were less likely to have generous cash-nexus benefits and service-nexus policies for the working poor. This result was related to the previous result which the working poor rates in the social-democratic and conservative-corporatist welfare regimes was low, while the working poor rates in the rest of three welfare regimes were higher.

Figure 10. Decommodification score and ALMP expenditure by welfare regimes

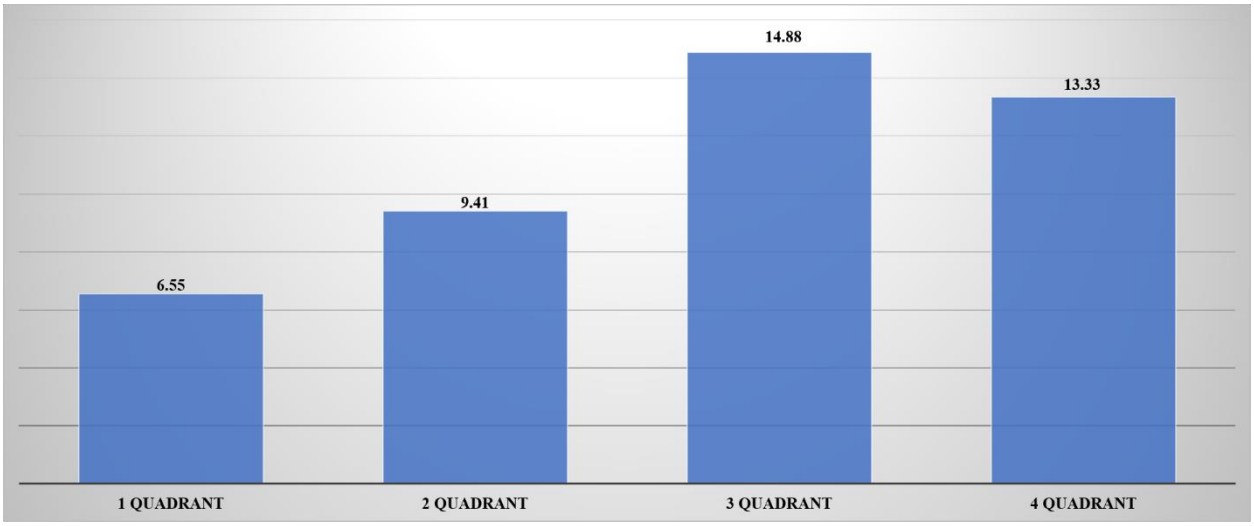


Note. 1. Liberal welfare regimes; 2. Conservative-corporatist welfare regimes; 3. Social-democratic welfare regimes; 4. Eastern Europe welfare regimes; 5. Southern Europe welfare regimes

Figure 11 elucidated the working poor incidence by quadrant. The countries in the first quadrant (6.55%) included Denmark, Finland, Sweden, Belgium, Austria, and France which had the lowest working poor rates in all quadrant countries. The countries in the second quadrant (9.41%) included Norway, Portugal, Switzerland, Slovenia, Czech Republic, and Latvia which had the second lowest working poor rates. The countries in the fourth quadrant (13.33%) included Germany, Poland, and Spain which were the third lowest working poor rates. Finally, the countries in the third quadrant (14.88%) included Estonia, Lithuania, Japan, Italy, New Zealand, Slovakia, Australia, United Kingdom, and United States which had the highest working

poor rates. The working poor rates in the countries with high decommodification scores was slightly lower than in the countries with high ALMPs expenditure level of GDP. As expected, decommodification would affect the odds of being working poor in the 25 countries.

Figure 11. The working poor rate by quadrant (%)



The current study surmised that there is a correlation between decommodification, ALMPs, and working poor rate in the following manner. See Table 10.

Table 10. Correlation between decommodification, ALMPs, and the working poor rate

	Decommodification	ALMPs	Working poor rate
Decommodification	1	.395	−.762**
ALMPs	.395	1	−.501*
Working poor rate	−.762**	−.501*	1

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The correlation results indicate that decommodification scores and the working poor rates were negatively correlated ($\gamma = -.762$, $p < .01$). That is, higher decommodification scores correlated to lower incidence of the working poor. Also, ALMPs expenditure and the working poor rate were negatively correlated ($\gamma = -.501$, $p < .05$). That is, high ALMPs expenditure correlated to the lower incidence of the working poor. The correlation table indicated that the

state-level variables were statistically significantly correlated to the incidence of the working poor. This study identified the relationships between decommodification, ALMPs expenditure, and the odds of being the working poor using HGLM.

HGLM

Unconditional model. The unconditional model only included the dependent variable, that was the odds of having a working poor status in order to examine the model fit. Table 11 described the results of unconditional model.

Table 11. Results of the HGLM analysis: unconditional model

	Coefficient	Standard error	Odds-ratio	t-value
Fixed effects				
Intercept	-2.048831***	0.095984	0.128886	-21.345
Random effects	Variance component			
Intercept	0.21196***			
N (individual)	18,183			
N (state)	25			

*p < .05, ** p < .01, ***p < .001

Based on the results, the ICC value was calculated as below;

$$ICC = \frac{0.212}{0.212+(\pi^2/3^{23})} \approx .0606$$

Approximately 6% of the total variation in the odds to have a working poor status could be explained by differences between the 25 countries. In contrast, 93.94% of the total variation in the odds to have a working poor status could be explained by differences between the individual/household factors. Variance within groups was larger than variance between groups due to small ICC value. Generally, if ICC value is close to 0, multilevel modeling does not need to identify the hierarchical structure data. The reason is that lower ICC values mean that there is comparatively small variance between countries or groups. According to Nezlek (2008),

[23] $\pi^2/3 = 3.289$

however, “there is little or no between groups variance in a measure does not mean that the relationship between this measure and another measure is the same across all groups, something that is assumed if one conducts and analysis that ignores the grouped structure of the data” (p. 857). Therefore, the study conducted HGLM using hierarchical structure data even with a low ICC value.

Conditional model. Table 12 described the results in conditional model 1, model 2, and model 3, which was analyzed using HGLM. The current study used the value of Variance Inflation Factor (VIF) to determine whether the independent variables shared a substantial degree of collinearity. The findings showed that the all VIF values in independent variables were lower than 3[24]. It meant there were no multicollinearity problems. The purpose of model 1 was to test the relationships (fixed-effect) between level-1 variables and the dependent (outcome) variable. With regard to individual factors (household level) in model 1, gender, marital status, education level, current work status of a householder, and the number of children were significant factors associated with the odds of being the working poor. More specifically, female householders (p = .038) were 1.12 times more likely to be in the working poor group than male householders. The odds-ratio of being the working poor for "not married" householders were 1.66-fold more likely to have the odds than "married" householders ($p < .001$). The highest educational background of householders was negatively associated with the odds of being the working poor ($p < .001$). Statistically speaking, householders with a medium- or high-level of education were less likely to become the working poor than their counterparts with low-level of educational background.

The employment status of householders was a significant predictor for the odds of being in the working poor group ($p < .001$), i.e. householders with full-time employment were

[24] A VIF value that is greater than 10 usually indicates a multicollinearity problem (Abu-Bader, 2011).

statistically significantly less likely to be the working poor than the householders who have part-time, less than part-time work. The number of children in a household was a statistically significant factor related to the odds of being the working poor ($p < .001$), i.e. the greater the number of children one has, the greater the odds of being the working poor. The number of household member positively affects the odds of being in the working poor group, but it was not statistically significant ($p = .234$).

Next, the random effects in model 1 was statistically significant, and variance component value decreased, compared with the variance component in the unconditional model. It means that there was a between-countries variance in the measure. The decreased variance component value means that ICC value of model 1 decreased compared with the unconditional model. ICC value of model 1 was .057, and ICC value of unconditional model was .0607. Therefore, it showed that explanation power of model 1 was improved from the unconditional model. This result can be interpreted to mean that the effects of state-level on the odds of being working poor was significantly associated with the independent variables (family composition and socio-economic status of householders) in level-1, $\tau_{00} = .20$, $\chi^2(24) = 382.84$, $p < .001$. The test of the random effect in model 1 indicated that the odds of being the working poor within the level-1 variables varied significantly across level-2.

Conditional model 2 added level-2 units which included decommodification scores and ALMPs expenditure levels of GDP. This model assumed the influence on the odds of being the working poor can be different by the countries, but the differences by country assumed that decommodification scores and ALMPs expenditure levels of GDP were associated. The results of fixed effects in model 2 were parallel with model 1. Decommodification scores ($P = .047$) were negatively associated with the odds of being working poor status, while ALMP expenditure

(P = .904) was not a statistically significantly factor for the odds being in the working poor status, even though it affected negatively the odds of being the working poor. Model 2 added the independent variables in level-2 unit. Therefore, random effects in model 2 indicated that variance component was decreased. As a result, ICC value of model 2 was .052. It decreased as compare with the ICC value of model 1 (.057). Therefore, it showed that explanation power of model 2 was improved rather than the model 1. Decommodification scores and ALMPs expenditure were well explained the variance of odds of being working poor and statistically significant (τ_{00} = .18, $\chi^2(22)$ = 344.39, p < .001).

The conditional model 3 tested a main effect of the individual- and state-level variables on the dependent variable as well as the cross-level interaction between level-1 and level-2 on the dependent variable. Householder's gender (p = .037), marital status (p < .001), educational background (p < .001), employment status (p < .001), and the number of children in household (p < .001) were statistically significant factors associated with the odds of being the working poor. Especially, female householders and single householders were more likely to become the working poor than male householder and householders with a partner. Educational background was negatively associated with the odds of being the working poor. Householders with high-education level were less likely to become the working poor than those with medium- and low-education level. Householders with full-time employment and less children were less likely to have the odds of being the working poor. However, the number of people in a household member (p =.670) was not statistically significant associated with the odds of being the working poor.

In the state-level variables, decommodification scores had a statistically significant negative relationship with the odds of being the working poor. Especially, increasing 1 point of decommodification score (p = .018) was expected to reduce a state's average odds of being the

working poor by factor of .978 ($e^{-0.022}$), which was equivalent to a 2.2% reduction in a state's average odds of being the working poor. It supported that Northern and Western European countries with high decommodification scores had relatively lower incidence of the working poor, while English-speaking countries including Japan with low decommodification scores had comparatively higher levels of the working poor. Statistically speaking, decommodification which included social insurance programs and pension system was likely to reduce the odds of being the working poor. However, the ALMPs expenditure level of GDP (p =.829) was not a statistically significant factor.

The cross-level interactions between state-level variables and individual-level variables were included in order to investigate whether the relationship between socio-demographic factors and the odds of being the working poor depended on the welfare state characteristics. There were three statistically significant the cross-level interactions between level-1 and level-2. Firstly, between decommodification and gender (P = .047) had statistically significant interaction effects on the odds of being the working poor. It means that the female householders were more likely to become the working poor. However, high decommodification score and gender negatively interacted with the odds of being the working poor. It indicated that the female householders were less likely to have the odds of being the working poor with high decommodification scores of the country they lived. Secondly, between decommodification and employment status (P = .043) had statistically significant the interaction effects. However, coefficient value (γ_{41} = .02, P = .043) in cross-level interaction effects decreased as compared with the main effect (β_{4j} = .45, P < .001). It means high decommodification scores decreased the odds of being the working poor in those who had part-time employment and those who were not in workforce. It indicated that more generous unemployment and sickness programs, and pension

system can reduce the odds of being the working poor in part-time and less than part-time group. Lastly, between ALMPs and the number of children (P = .025) had statistically significant interaction effects. Even though ALMPs were not statistically significant factors in main effects, ALMPs with the number of children in the household on the interaction effects were proven to be significant factors associated with the odds of being the working poor. Especially, coefficient value ($\gamma_{62} = -.20$, P = .025) in cross-level interaction effects decreased as compared with the main effect (β_{4j} = .22, P < .001). It means high ALMPs expenditure decreased the odds of being the working poor in the greater number of children in a household. It can be interpreted that more ALMPs expenditure can reduce the odds of being the working poor in the greater number of children in household group than other socio-demographic groups.

ICC value of model 3 was .049. It decreased as compare with the ICC value of model 2 (.052). Therefore, it showed that explanation power of model 3 was improved rather than the model 2. ICC values decreased from the unconditional model to the full model in this study. This finding showed that explanatory power of models was increased.

Table 12. HGLM results: conditional model

Parameter	Model 1			Model 2			Model 3		
Fixed effects	Coeff	SE	OR	Coeff	SE	OR	Coeff	SE	OR
Intercept	−2.31***	.10	.10	−1.94***	.16	.14	−2.14***	.06	.12
Level 1									
Gender	.12*	.06	1.12	.12*	.06	1.13	.12*	.05	1.13
Marital status	.51***	.05	1.66	.50***	.06	1.66	.46***	.05	1.58
Education level	-.88***	.04	.42	-.87***	.04	.42	−.79***	.04	.46
Current work status	.54***	.04	1.72	.54***	.04	1.72	.45***	.04	1.56
Number of members	.04	.03	1.04	.03	.03	1.04	.04	.04	1.04
Number of children	.23***	.04	1.26	.23***	.04	1.28	.22***	.04	1.24
Level-2									
Decommodification				−.04*	.16	.96	−.02*	.01	.98
ALMPs				−.02	.28	.98	.04	.18	1.04
Interaction									
Deco × female							−.02*	.01	.98
Deco × work status							.02*	.01	1.02
ALMPs × children							−.20*	.09	.82
Random effects	SD	Var	χ^2	SD	Var	χ^2	SD	Var	χ^2
Intercept	.45	.20	382.84***	.43	.18	344.39***	.42	.17	207.80***
Gender							.32	.10	68.88***
Marital status							.30	.09	58.91***
Education level							.18	.03	44.78**
Current work status							.22	.05	60.71***
Number of members							.40	.16	196.00***
Number of children							.40	.16	143.20***

Note. Coeff: Coefficient, SE: Standard error, OR: Odds ratio, Deco: Decommodification, children: number of children, SD: Standard deviation, Var: Variance component

*p < .05, ** p < .01, ***p < .001

Considering the findings from HGLM, individual- (i.e., gender, education level, marital status, employment status, and number of children in household) and state-level factors (decommodification) influenced the working poor status in the 25 welfare states. Therefore, the findings statistically supported to two research hypotheses.

CHAPTER 5

DISCUSSION

The purpose of this study was to identify the influencing factors of the working poor in the 25 welfare states. This chapter includes a discussion of major findings as related to the literature on the welfare states characteristics, welfare regimes typology, and mechanism of the working poor at the individual- and state-levels. Also included is a discussion on the implication for social work practice and policy. The chapter concludes with the limitations and future direction of the study, and a brief summary.

Primarily, the discussions revisit the two research questions:

1. What are individual-level factors (e.g., gender, education, marital status, family composition, and current employment status) affecting the likelihood of being the working poor?
2. What are state-level factors (e.g., decommodification and Active Labor Market policies) affecting the likelihood of being the working poor?

The study aimed at identifying the influencing factors for the working poor status in the welfare states. It uses the hierarchical structure data composed of individual- and state-level data, thus it used multilevel modeling analysis. The utility of multi-dimensional approaches differentiated this study from other works and approaches that have been done on studying the working poor. Most studies have been case studies on individual countries, and are limited based on region, and often are single level studies (Caputo, 2007; Cheung et al., 2016; Halleröd et al., 2015; Marx et al., 2012; McDonald, 2017; Pradella, 2015; Swaffield et al., 2018; Torraco, 2016).

Interpretation of the Findings

The study hypothesized that the individual and state characteristics affected the odds of being the working poor. Here individual characteristics were measured by socio-demographic factors, such as, gender, education level, current work status, marital status of householder, and family compositions. The state characteristics were measured by decommodification related to social insurance and pension system; and ALMPs, which is related to service-nexus policies. The interpretation of the findings described as follows.

Firstly, the current study hypothesized that individual-level factors, such as gender, education, marital status, number of household members, number of children in household, and current employment status would significantly affect the likelihood of being the working poor. The findings from this study showed that the odds of being in the working poor group was significantly associated with the socio-demographic features of the householder. The female head of household, single head of household, lower education level, less than part-time job, and having more children in household were significant factors associated with the odds of being the working poor. Such findings support the Crettaz's theory about the composition of the mechanism of the working poor.

Next, this study hypothesized that state-level factors, such as decommodification and ALMPs would significantly affect the likelihood of being the working poor. This study revealed that decommodification levels were significantly associated with the odds of being the working poor. That is, increasing decommodification score can decrease the odds of being the working poor. However, ALMPs expenditure of GDP was not statistically significant factors associated with the odds of being the working poor. Furthermore, the results regarding the working poor rates were that the incidence of working poor was higher in countries and welfare regimes which

had lower decommodification scores and ALMPs expenditures, and higher levels of GDP. The findings in the current study indicated that the odds of being the working poor is determined by state characteristics. Northern European countries which can be categorized into social-democratic welfare regimes had high decommodification scores and ALMPs expenditure with lower the working poor rates. In contrast, English-speaking countries which can be categorized into liberal welfare regimes had low decommodification scores and ALMPs expenditure with higher the working poor rates.

Thirdly, the cross-level interaction effects in HGLM were able to identify that certain social policies on a state-level were significantly associated with specific socio-demographic groups, such as single mother with many children. The cross-level interaction results are as follows. The female householder was less likely to be the working poor with high decommodification scores, as well as having part-time, and less than part-time laborer. They are also less likely to be the working poor with high decommodification scores, and higher ALMPs expenditure reduced the odds of being a working poor in households with larger number of children. That is, if a country has a generous social welfare system with accompanied social policy, the odds of being in the working poor and the working poor rates would be reduced. In this sense therefore, the current findings were consistent with Esping-Andersen's welfare regimes typology.

Implications for Social Work Practice and Policy

Another key welfare state debate in social work practice focuses on how welfare benefits and services can be designed and delivered in ways that empower and enable the marginal citizens. Based on the findings, a social policy designed on an integrated model where macro-factors, also known as upstream factors, are linked, with the micro factors, i.e. downstream

factors that affect the well-being of individuals is needed. Macro-level risk factors in the last several decades have experienced structural changes, such as changing family structures and the impact of industrialization. These changes which have included the growth in the service industry, have increased the participation of the women in employment, for example. However, they never addressed other unintended consequences such as meeting the childcare needs as women go back to work. Other areas that were not quite addressed are the care for the elderly, especially as baby boomers come of age. According to OECD (2019), a proportion of women who are in part-time employment out of all employed women was 25.4%, while for men the proportion was 9.4% in 2018. As a consequence, women are inherently more likely to work part-time jobs, have increased job instability, and often employed in low-skilled workforce.

In addressing macro-level risk factors, it is essential to change structural or institutional level factors. These changes could include encouraging women to enter the labor market by improving their labor participation through childcare supports. A good welfare system would address childcare responsibilities and elderly care supports by providing financial help. These could take the form of in-kind and cash benefits policies. To support women's earning power, educational supports such as providing subsidies for job trainings could go a long way. Providing day-care vouchers to support families, or single parent households would provide some needed cushion. In addition, expanding compulsory education for children aged 3 to 5 would ensure that children are given a head-start in life. As elderly care becomes more urgent, programs that provide subsidies for the care of this population are essential. Unfortunately, however, most subsidy or voucher programs for childcare services and elderly care focus on poverty without necessarily looking at a comprehensive approach in all areas involving all citizens. Therefore, the study suggests that income threshold of eligibility should be changed from relying on the

current official poverty line to a more livable income that can provide services to the working poor.

The findings reveal that factors regarding human capital including employment status, educational backgrounds, affect the odds of being the working poor. Technological development has reduced certain job opportunities, such as the low-skilled manufacturing jobs resulting from globalization and the outsourcing of jobs to high labor, low wage countries. Correspondingly, low-educated, and low-skilled workers have high propensity to lose these jobs. Thus, the findings of the study show that being a female worker, low-skilled, or low-educated, increased the odds of being the working poor. Using strength-based, or solution-focused interventions can support female householders who may struggle with job instabilities. Solution-focused interventions focus clients' attention on what is already working in their lives. It helps workers and clients identify strengths and resources that can be brought to bear on the current situation (Lindsey, 2000; Smith, 2006). Therefore, welfare benefits and services for female householders could be designed at a micro-level by utilizing the social work perspectives of strength based, or solution-focused interventions that put women's needs at the center of intervention.

In addition to this micro-level approach, the social welfare benefits and services can support females who are working poor. For example, income maintenance policy, such as earned income tax credit, children's allowance, unemployment benefits from social insurance programs, and work incentives may be beneficial to improve income stability. Further, if childcare services are provided at a workplace, females, especially single mothers would be able to spend more time at work or earn higher wages. However, increasing work hours alone may not be sufficient because they would still remain below the poverty line due to their low wage earnings (McBain, 2018). Therefore, the focus of policy for the part-time worker and single mother should be on

improving their human capital, and income, and employment security. ALMPs including job training can improve their human capital, job opportunity, job stability, and employment security. Also, income security can be facilitated by work incentives, increasing minimum wage, and tax credit through social insurance programs. The purpose of this study was not to recommend that all countries have a uniform social policy for the working poor, but rather, have a tailored country by country approach. Considering the findings that the odds of being the working poor can vary by the country, the welfare state characteristics of the 25 countries could differ. Due to different historical, political, cultural, and economic circumstances, it is critical that the solutions to addressing the working poor problem should also be different by design, and unique socio-economic environment.

Finally, the findings confirm that decommodification is a significant factor associated with the odds of being the working poor. It explained the reason why cross-national variations in the incidence of the working poor exists cross the welfare states despite similar socio-demographical features. Therefore, the study explains why Northern European and Western European countries, with higher decommodification scores, have relatively lower incidence of the working poor; while English-speaking countries, and Japan have lower decommodification scores and higher levels of the working poor. Decommodification and social transfers allow labor to opt out of the labor market to find better jobs and accrue sick leave, which can make a difference in the lives of the working poor. Although Esping-Andersen et al. (2002) argue that the social insurance and income maintenance principles of the old welfare states were not able to respond effectively to the new social risk; and that the structural unemployment, and the polarization of the labor market should be responded to by new methods and active aspects policies, such as service-nexus, incentive to work, and development of human capital. The

reason is that the work disincentives might be produced by high level of decommodification (Huo et al., 2008). That notwithstanding, there is a new world order that is being shaped by the emergence of novel Coronavirus (SARS-COV-2) caused by severe acute respiratory syndrome (COVID-19). It has created a huge public health concern with potential devastating effects on many countries. Over 16,812,755 cases globally have been recorded, and still rising, and more than 662,000 deaths have occurred as of July 2020 (World Health Organization, 2020). Many workers have lost their jobs due to social distancing and quarantine requirements, creating labor market segmentation and unprecedented job losses. In other words, a job opportunity for the laborer in the primary and secondary industry has not been created under the pandemics which can be called a brand-new social risk. Rather, the service-nexus principles of the new welfare states are not able to respond effectively to the brand-new social risk. Therefore, many countries can go back to big government, and they will try to overcome the new environment using state intervention with high public expenditure. Through the income maintenance policy, the government encourages the consumer spending, and then it enhances the possibility of tremendous expansion within the domestic market. Therefore, income maintenance especially basic income might be one of the ways for reducing the social risk under the new environment in the upcoming era.

Limitations and Future Directions

Although the study has made some significant contributions regarding the working poor, there are some limitations to discuss.

First, the current study included selective countries (25 countries) to the analysis because of the availability of secondary data. However, other from East Asia (e.g., South Korea, Taiwan, and Singapore), South America, the Middle East, and Southeast Asia, and Africa may present

more comprehensive results as they have a large number of the working poor. SIED has a plan to release the expanded dataset regarding the East Asia countries (Social Policy in East Asia Dataset: SPEAD), which other researchers should consider utilizing various datasets for further studies. SPEAD will cover social insurance programs in Indonesia, South Korea, Philippines, Taiwan, Thailand and Vietnam. This dataset will also include information about social assistance and family benefits from low- and mid-income countries across the globe. Therefore, the more countries can and should be considered in a follow-up study if a publicly available data is released in the future[25]. Especially, Esping-Andersen argued that each welfare state had a unique state characteristic, and the welfare states could be clustered based on an empirical indicator. Thus, the pattern, and causality between state characteristics, social problems, and associated risk can be identified. That said, in Eastern European countries, there were different patterns of working poor incidences and state characteristics. Considering these findings, the regime typology ought to be expanded, with new countries in Eastern Europe, East Asia, Southern America, and Africa added as a follow-up study. Specifically, the welfare regimes typology should reflect the consequence of globalization and the social structural changes that have taken place as a reconfiguration of the geopolitical landscape.

Secondly, the study identified the mechanism of the working poor based on Crettaz's (2013) theory: (1) globalization, (2) deindustrialization, (3) technological changes, (4) changing family patterns, (5) Female labor market participation, (6) welfare state benefits and services, and (7) labor market regulations. With this approach, this study focused only on the welfare benefits and services, and labor market policy perspectives in a macro-level. Thus, future studies

[25] Various dataset resources have a plan to release or released a new dataset which includes a new country. For example, Luxembourg Income Study (LIS) has a plan to release the dataset which includes Egypt, Vietnam, Palestine, Laos, and Ivory Coast.

should include other macro-level perspectives that encompass globalization, deindustrialization, and technological changes. Especially, globalization, deindustrialization, and technological changes can explain the changes industry structure and the changing patterns of the working poor. Therefore, to identify the 3 mechanisms for the working poor using longitudinal analysis would be significant research in the future.

Thirdly, the different features and development trajectories of ALMPs need to be identified in detail. ALMPs are composed of six components: (1) public employment services and administration, (2) job training, (3) employment incentives, (4) sheltered and supported employment and rehabilitation, (5) direct job creation, and (6) start-up incentives. The study identified the overall feature of ALMPs expenditure across the 25 countries. However, the findings in this study indicated that the feature of ALMPs expenditures had different in each country and welfare regime. It means that each country and welfare regime have different focused investments in ALMPs subcomponents. For example, social-democratic welfare regimes focused on job training and providing job opportunity, while Southern Europe welfare regimes focused on employment incentive especially start-up incentives for the self-employed in Spain. Therefore, the relationships between the odds of being the working poor and the unique feature of each 6 subcomponent of ALMPs need to identify in the follow-up study.

Finally, in this study, characteristics of welfare states were defined as the two empirical indicators: (1) decommodification scores and (2) ALMPs expenditure. However, a function of welfare states goes beyond a representative of social rights (Kunißen, 2019). Especially, decommodification scores in Esping-Andersen's (1990) welfare regimes typology underestimated gender-specific issues into account. Thus, a follow-up study should define and measure the various characteristics of welfare states using a variety of indices. For example,

family policy (e.g., replacement rate of child and family benefits), including childcare services can measure a recent welfare phenomenon, but decommodification and ALMPs indices may neglect this aspect of family policy. Also, welfare state characteristics can be measured using gender discrimination of labor market and employment status. In order to measure gender discrimination of labor market, defamilialization can be a good indicator. The concept of decommodification focuses on the labor market dependency, while the concept of defamilialization focuses on the family dependency. That is, many women financially depend on their—male—family members in traditional or patriarchal family structure. Therefore, many women are unable to commodify their labor force and should bear the major caring responsibilities in the family (Bambra, 2007; Chau & Sam, 2013). Defamilialization can be measured by: (1) relative female labor market participation rate, (2) maternity leave compensation for duration covered, and (3) relative female tertiary education attainment (Yu et al., 2015). Also, measuring welfare state characteristics is strongly affected by a type of dataset because each dataset has their own conceptualization of a certain variable. For example, replacement rates in Comparative Welfare Entitlement Dataset (CWED) and SIED are different because the both datasets have different calculation of taxes and the reference period of time in which a benefit is received (Bolukbasi & Öktem, 2018; Ferrarini et al., 2013; Wenzelburger et al., 2013). More specifically, the definitions of notional worker in the SIED and CWED are different. The notional worker in SIED defines as aged 30 with 10years work history, while CWED defines as aged 40 with 20years work history. For example, unemployment benefits duration in Austria is 30 weeks for aged 30, but the duration is 39 weeks if the worker is aged 40 or older. Therefore, unemployment benefits duration in SIED is 30 weeks, and CWED is 39

weeks. Because it can affect the variation of decommodification scores, the follow-up study should consider datasets selection and various indicators for the welfare states research.

Conclusions

Traditionally, labor was an antidote of the poverty. However, labor has not prevented the poverty since the end of the 20th century. Due to this, the working poor issue has been reemerged over the world. This study, therefore, was to identify influencing factors the working poor across the 25 countries in a multidimensional perspective. This study hypothesized that individual characteristics and state characteristics would affect the odds of being the working poor. To ascertain these hypotheses, the study conducted HGLM, also known as multilevel modeling. Level-1, the individual level variables were composed of, family, socio-demographic factors of householders, and level-2, state level variables were composed of decommodification scores and ALMPs expenditure levels of GDP. The results from this study supported the research hypothesis; (1) Individual-level factors (e.g., gender, education, marital status, family composition, and current employment status) significantly affect the likelihood of being the working poor, and (2) State-level factors (e.g., decommodification and Active Labor Market policies) significantly affect the likelihood of being the working poor. Especially, the state characteristics and social policies decreased the odds of being the working poor which interacted with the socio-demographic factors. Therefore, the findings of this study contribute to identifying the cause and how to respond to the working poor issues in our society.

Labor may have trouble to prevent being the working poor as well as poverty. However, state can prevent the working poor and reduce the magnitude of the working poor using an appropriate social policy. The policy for the working poor has altered from income maintenance policy (e.g., social insurance and pension systems) to an incentive to work (e.g., employment

incentives, job training, and rehabilitation) since 1980s (Pierson, 1995). However, the findings of this study identified that income maintenance policy is still significant for the working poor. Social policy focuses on redistribution a wealth from the fortunate-people to the unfortunate-people. The key welfare state debate focuses on how welfare benefits and services can be designed and delivered in ways that empower and enable marginal citizens. The working poor still has a lack of resources for development human capital due to lower educational background and lower labor attachment. Therefore, state intervention through social policy should provide the both income maintenance and human capital development perspectives. The value of labor must be guaranteed and compensated through social policies and welfare states.

References

Abu-Bader, S. H. (2011). *Advanced and multivariate statistical methods for social science research with a complete SPSS guide*. Chicago, IL. Lyceum books INC.

Abu Sharkh, M., & Gough, I. (2010). Global welfare regimes: a cluster analysis. *Global Social Policy*, *10*(1), 27-58.

Aidukaite, J. (2009). Old welfare state theories and new welfare regimes in Eastern Europe: Challenges and implications. *Communist and post-communist studies*, *42*(1), 23-39.

Alper, K., Huber, E., & Stephens, J. D. (2019). *Work and poverty in post-industrial democracies* (No. 763). LIS Working Paper Series.

Andersen, J. G. (2012). Welfare states and welfare state theory. *Center for Comparative Welfare Studies (CCWS), Department of Political Science, Aalborg University*.

Amenta, E. (1993). The state of the art in welfare state research on social spending efforts in capitalist democracies since 1960. *American Journal of Sociology*, *99*(3), 750-763.

Arts, W. A., & Gelissen, J. (2002). Three worlds of welfare capitalism or more? A state-of-the-art report. *Journal of European social policy*, *12*(2), 137-158.

Arts, W. A., & Gelissen, J. (2010). Models of the welfare state. In Castles, F. G., Leibfried, S., Lewis, J., Obinger, H., & Pierson, C. (Eds.), *The Oxford handbook of the welfare state* (pp.569-583). Oxford: Oxford University Press.

Asatiani, M., & Verulava, T. (2017). Georgian welfare state: Preliminary study based on Esping-andersen's typology. *Economics and Sociology*, *10*(4), 21-28.

Attanasio, O. P., & Pistaferri, L. (2016). Consumption inequality. *Journal of Economic Perspectives*, *30*(2), 3-28.

Azarpazhooh, A., & Quiñonez, C. (2015). Treatment preferences for toothache among working poor Canadians. *Journal of endodontics*, *41*(12), 1985-1990.

Bambra, C. (2005). Cash versus services: 'worlds of welfare' and the decommodification of cash benefits and health care services. *Journal of social policy*, *34*(2), 195-213.

Bambra, C. (2006). Research Note: Decommodification and the worlds of welfare revisited. *Journal of European Social Policy*, *16*(1), 73-80.

Bambra, C. (2007). Defamilisation and welfare state regimes: a cluster analysis. *International Journal of social welfare*, *16*(4), 326-338.

Barr, N. A. (2012). *The economics of the welfare state*. 5th edition. Oxford: Oxford university press.

Bell, A., Fairbrother, M., & Jones, K. (2019). Fixed and random effects models: making an informed choice. *Quality & Quantity*, 53(2), 1051-1074.

Bergh, A. (2014). *Sweden and the revival of the capitalist welfare state*. Northampton, MA: Edward Elgar Publishing Limited.

Bolukbasi, H. T., & Öktem, K. G. (2018). Conceptualizing and operationalizing social rights: Towards higher convergent validity in SCIP and CWED. *Journal of European Social Policy*, *28*(1), 86-100.

Boone, J., & Van Ours, J. C. (2004). Effective active labor market policies. IZA Discussion Papers, No. 1335, Institute for the Study of Labor (IZA), Bonn.

Brady, D. (2019). Theories of the causes of poverty. *Annual Review of Sociology*, *45*.

Brady, D., Kaya, Y., & Beckfield, J. (2007). Reassessing the effect of economic growth on well-being in less-developed countries, 1980–2003. *Studies in Comparative International Development*, *42*(1-2), 1-35.

Brady, D., Fullerton, A. S., & Cross, J. M. (2010). More than just nickels and dimes: A cross-national analysis of working poverty in affluent democracies. *Social Problems, 57*(4), 559-585.

Brady, D., Baker, R. S., & Finnigan, R. (2013). When unionization disappears state-level unionization and working poverty in the United States. *American Sociological Review, 78*(5), 872-896.

Brülle, J., Gangl, M., Levanon, A., & Saburov, E. (2019). Changing labour market risks in the service economy: Low wages, part-time employment and the trend in working poverty risks in Germany. *Journal of European Social Policy, 29*(1), 115-129.

Bryk, A. S., & Raudenbush, S. W. (1987). Application of hierarchical linear models to assessing change. *Psychological bulletin, 101*(1), 147.

Burroni, L., & Keune, M. (2011). Flexicurity: A conceptual critique. *European Journal of Industrial Relations*, *17*(1), 75-91.

Burtless, G. (2017). Social policy for the working poor: U.S. reform in a cross-national perspective. In Gilbert, N. & Parent, A. (Eds.), *Welfare Reform: A comparative assessment of the french and U. S. experiences* (pp. 3-39). New York, NY: Routledge.

Caputo, R. K. (2007). Working and poor: A panel study of maturing adults in the US. *Families in Society*, *88*(3), 351-359.

Castles, F. G. (2010). The English-speaking countries. In Castles, F. G., Leibfried, S., Lewis, J., Obinger, H., & Pierson, C. (Eds.), *The Oxford handbook of the welfare state* (pp. 630-642). Oxford: Oxford University Press.

Chau, R. C., & Sam, W. K. (2013). Defamilisation of twenty-two countries: Its implications for the study of East Asian welfare regime. *Social Policy and Society, 12*(3), 355.

Cheung, K. C. K., & Chou, K. L. (2016). Working poor in Hong Kong. *Social Indicators Research*, *129*(1), 317-335.

Cheung, K. C. K., Chan, W. S., & Chou, K. L. (2019). Material Deprivation and Working Poor in Hong Kong. *Social Indicators Research*, 1-28.

Crépon, B., & Van Den Berg, G. J. (2016). Active labor market policies. Working Paper, No. 2016:17, Institute for Evaluation of Labour Market and Education Policy (IFAU), Uppsala.

Crettaz, E. (2011). *Fighting working poverty in post-industrial economies: causes, trade-offs and policy solutions*. Cheltenham, UK and Northampton, MA: Edward Elgar Publishing.

Crettaz, E. (2013). A state-of-the-art review of working poverty in advanced economies: theoretical models, measurement issues and risk groups. *Journal of European Social Policy*, *23*(4), 347-362.

Crettaz, E., & Bonoli, G. (2010). Why are some workers poor? The mechanisms that produce working poverty in a comparative perspective. *The Mechanisms that Produce Working Poverty in a Comparative Perspective (October 1, 2010). REC-WP Working Papers on the Reconciliation of Work and Welfare in Europe*, (12-2010).

Crettaz, E., & Suter, C. (2013). The impact of adaptive preferences on subjective indicators: An analysis of poverty indicators. *Social Indicators Research*, *114*(1), 139-152.

Decancq, K., Goedemé, T., Van den Bosch, K., & Vanhille, J. (2014). The evolution of poverty in the European Union: concepts, measurement and data. In Cantillon, B. & Vandenbroucke, F (Eds.), *Reconciling work and poverty reduction: How successful are European welfare states?* (pp. 60-93). New York, NY: Oxford University Press.

De Deken, J. (2014). Identifying the skeleton of the social investment state: defining and measuring patterns of social policy change on the basis of expenditure data. In Cantillon, B. & Vandenbroucke, F (Eds.), *Reconciling work and poverty reduction: How successful are European welfare states?* (pp. 260-285). New York, NY: Oxford University Press.

Emmenegger, P., Kvist, J., Marx, P., & Petersen, K. (2015). Three worlds of welfare capitalism: The making of a classic. *Journal of European Social Policy*, *25*(1), 3-13.

Ene, M., Leighton, E. A., Blue, G. L., & Bell, B. A. (2015). Multilevel models for categorical data using SAS® PROC GLIMMIX: The basics. In *SAS Global Forum* (pp. 3430-2015).

Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. New Jersey, NJ: Princeton University Press.

Esping-Andersen, G. (1994) 'Welfare states and the economy'. In Smelser, N. J., & Swedberg, R. (Eds.), *The handbook of economic sociology* (pp. 711–732). New York, NY: Princeton University Press.

Esping-Andersen, G. (1999). *Social foundations of postindustrial economies*. Oxford: Oxford University Press.

Esping-Andersen, G., Gallie, D., Hemerijck, A., & Myles, J. (2002). *Why we need a new welfare state*. Oxford: Oxford University Press.

Eurofound (2017), *In-work poverty in the EU*, Publications Office of the European Union, Luxembourg.

Fenger, H. M. (2007). Welfare regimes in Central and Eastern Europe: Incorporating post-communist countries in a welfare regime typology. *Contemporary issues and ideas in social sciences*, *3*(2).

Ferragina, E. (2017). The welfare state and social capital in Europe: Reassessing a complex relationship. *International Journal of Comparative Sociology*, *58*(1), 55-90.

Ferragina, E., & Seeleib-Kaiser, M. (2011). Thematic review: Welfare regime debate: past, present, futures?. *Policy & Politics*, *39*(4), 583-611.

Ferrarini, T., Nelson, K., Korpi, W., & Palme, J. (2013). Social citizenship rights and social insurance replacement rate validity: pitfalls and possibilities. *Journal of European Public Policy*, *20*(9), 1251-1266.

Förster, M.F. (1994), "Measurement of Low Incomes and Poverty in a Perspective of International Comparisons", *OECD Labour Market and Social Policy Occasional Paper*, No. 14, Paris.

Gammarano, R. (2019). *The working poor or how a job is no guarantee of decent living conditions.* Geneva, Switzerland: ILO (ILO Issue Brief No. 6).

Giesselmann, M. (2015). Differences in the patterns of in-work poverty in Germany and the UK. *European Societies*, *17*(1), 27-46.

Grogger, J. (2003). The effects of time limits, the EITC, and other policy changes on welfare use, work, and income among female-headed families. *Review of Economics and statistics*, *85*(2), 394-408.

Grund, S., Lüdtke, O., & Robitzsch, A. (2018). Multiple imputation of missing data for multilevel models: Simulations and recommendations. *Organizational Research Methods*, *21*(1), 111-149.

Haar, J., Carr, S. C., Arrowsmith, J., Parker, J., Hodgetts, D., & Alefaio-Tugia, S. (2018). Escape from working poverty: Steps toward Sustainable Livelihood. Sustainability, 10(11), 4144.

Halleröd, B., Ekbrand, H., & Bengtsson, M. (2015). In-work poverty and labour market trajectories: Poverty risks among the working population in 22 European countries. *Journal of European Social Policy*, *25*(5), 473-488.

Harris, K. M. (1993). Work and welfare among single mothers in poverty. *American Journal of Sociology*, *99*(2), 317-352.

Hick, R., & Lanau, A. (2017). *In-work poverty in the UK: Problem, policy analysis and platform for action.* Cardiff: Cardiff University.

Hick, R., & Lanau, A. (2018). Moving in and out of in-work poverty in the UK: An analysis of transitions, trajectories and trigger events. *Journal of Social Policy*, *47*(4), 661-682.

Holliday, I. (2000). Productivist welfare capitalism: Social policy in East Asia. *Political studies*, *48*(4), 706-723.

Holliday, I. (2004). East Asian social policy in the wake of the financial crisis: farewell to productivism?. *Policy & Politics*, *33*(1), 145-162.

Hong, K. Z. (2005). An exploratory study on the working poor: the definition of the working poor and their characteristics. *Korean Journal of Social Welfare*, *57*(2), 119-142.

Hox, J. J., Moerbeek, M., & Van de Schoot, R. (2010). *Multilevel analysis: Techniques and applications.* 2nd edition. New York: Routledge.

Huang, F. L. (2018). Multilevel modeling myths. *School Psychology Quarterly*, *33*(3), 492-509.

Hudson, J., & Kühner, S. (2010). Beyond the dependent variable problem: the methodological challenges of capturing productive and protective dimensions of social policy. *Social Policy and Society*, *9*(2), 167-179.

Hudson, J., & Kühner, S. (2012). Analyzing the productive and protective dimensions of welfare: looking beyond the OECD. *Social Policy & Administration*, *46*(1), 35-60.

Huo, J., Nelson, M., & Stephens, J. D. (2008). Decommodification and activation in social democratic policy: resolving the paradox. *Journal of European Social Policy*, *18*(1), 5-20.

International Labour Organization (ILO). (2018). *Decent work and the sustainable development goals: A guidebook on SDG labour market indicators.* Geneva, Switzerland: International Labour Organization.

International Labour Organization (ILO). (2019). *World employment and social outlook: Trends 2019*. Geneva, Switzerland: International Labour Organization.

Israel, S., & Spannagel, D. (2019). Material deprivation in the EU: A multi-level analysis on the influence of decommodification and defamilisation policies. *Acta Sociologica*, *62*(2), 152-173.

Jalil, M., & Oakkas, M. (2019). Locating the welfare system of developing countries in the light of welfare regime models: The case of Bangladesh. *Journal of Social Work Education and Practice*, *4*(1), 16-25.

Jakobsen, T. G. (2011). Welfare attitudes and social expenditure: do regimes shape public opinion?. *Social Indicators Research, 101*(3), 323-340.

Jæger, M. M. (2006). Welfare regimes and attitudes towards redistribution: The regime hypothesis revisited. *European Sociological Review*, *22*(2), 157-170.

Kaufmann, F. X. (2000). Towards a theory of the welfare state. *European Review*, *8*(3), 291-312.

Kautto, M. (2002). Investing in services in West European welfare states. *Journal of European Social Policy*, *12*(1), 53-65.

Kautto, M. (2010). The Nordic countries. In Castles, F. G., Leibfried, S., Lewis, J., Obinger, H., & Pierson, C. (Eds.), *The Oxford handbook of the welfare state* (pp. 586-600). Oxford: Oxford University Press.

Kim, K. S., Lee, Y., & Lee, Y. J. (2010). A multilevel analysis of factors related to poverty in welfare states. *Social Indicators Research*, *99*(3), 391-404.

Kim, A. E., & Lee, C. M. (2014). Neoliberalism and insecure employment in Korea: Emergence of the working poor and worsening socio-economic polarization. *Korea Observer*, *45*(2), 255.

Klitgaard, M. B. (2007). Do welfare state regimes determine public sector reforms? Choice reforms in American, Swedish and German schools. *Scandinavian political studies*, *30*(4), 444-468.

Kreft, I. G. (1996). *Are multilevel techniques necessary? An attempt at demystification.* Los Angeles, CA: California State University.

Kuhnle, S., & Sander, A. (2010). The emergence of the western welfare state. In Castles, F. G., Leibfried, S., Lewis, J., Obinger, H., & Pierson, C. (Eds.), *The Oxford handbook of the welfare state* (pp. 61-80). Oxford: Oxford University Press.

Kunißen, K. (2019). From Dependent to Independent Variable: A Critical Assessment of Operationalisations of 'Welfare Stateness' as Macro-Level Indicators in Multilevel Analyses. *Social Indicators Research*, *142*(2), 597-616.

Lai, D. W., & Chui, E. W. (2014). A tale of two cities: A comparative study on the welfare regimes of Hong Kong and Macao. *Social Policy and Society*, *13*(2), 263-274.

Lee, G., Jeong, Y., & Kim, S. (2016). Impact of individual traits, urban form, and urban character on selecting cars as transportation mode using the hierarchical generalized linear model. *Journal of Asian Architecture and Building Engineering*, *15*(2), 223-230.

Levanon, A. (2018). Labor market insiders or outsiders? A cross-national examination of redistributive preferences of the working poor. *Societies*, *8*(3), 72.

Lindsey, E. W. (2000). Social work with homeless mothers: A strength-based solution-focused model. *Journal of Family Social Work*, *4*(1), 59-78.

Lohmann, H. (2009). Welfare states, labour market institutions and the working poor: A comparative analysis of 20 European countries. *European Sociological Review*, *25*(4), 489-504.

Lohmann, H., & Marx, I. (2008). The different faces of in-work poverty across welfare state regimes. In Andreß, H. J. & Lohmann, H. (Eds.). *The Working Poor in Europe: Employment, Poverty and Globalisation* (pp. 17-46). Northampton, MA: Edwards Elgar Publishing.

Lyon, D. J. (2018). Working poverty: Low skills or low wages?. *Challenge*, *61*(1), 42-55.

Madley-Dowd, P., Hughes, R., Tilling, K., & Heron, J. (2019). The proportion of missing data should not be used to guide decisions on multiple imputation. *Journal of clinical epidemiology*, *110*, 63-73.

Manning, A. (2004). We can work it out: the impact of technological change on the demand for low-skill workers. *Scottish Journal of Political Economy*, *51*(5), 581-608.

Marchal, S., Marx, I., & Verbist, G. (2017). Income support policies for the working poor. IZA Discussion Papers, No. 10665, Institute for the Study of Labor (IZA), Bonn.

Martin, J. P. (2014). Activation and active labour market policies in OECD countries: stylised facts and evidence on their effectiveness. *IZA Journal of Labor Policy*, *4*(1), 4.

Marx, I., Vanhille, J., & Verbist, G. (2012). Combating in-work poverty in Continental Europe: an investigation using the Belgian case. *Journal of Social Policy*, *41*(1), 19-41.

Marx, I., & Nolan, B. (2014). In-work poverty. In Cantillon, B., & Vandenbroucke, F. (Eds.), *Reconciling work and poverty reduction: how successful are European welfare states?* (pp. 131-156). Oxford: Oxford University Press.

McBain, T. D. (2018). Problems Facing the Working Poor: Implications for Counseling. *The Hilltop Review*, *10*(2), 4.

McCoach, D. B. (2010). Multilevel Modeling. In Hancock, G. R., & Muelleris, R. O. (Eds.), *The Reviewer's Guide to Quantitative Methods in the Social Sciences.* (pp. 292-312). New York, NY: Routledge.

McDonald, J. F. (2017). Service industries and the working poor in major metropolitan areas in the United States. In McDonald, J. F. (Eds.), *Sources of Metropolitan Growth* (pp. 255-278). New York: Routledge.

McGranahan, D. (1985). Poverty among children and elderly. *Rural Development Perspectives*, *1*(2), 36-37.

Minas, C., Jacobson, D., Antoniou, E., & McMullan, C. (2014). Welfare regime, welfare pillar and southern Europe. *Journal of European social policy*, *24*(2), 135-149.

Minkler, M., & Stone, R. (1985). The feminization of poverty and older women. *The Gerontologist*, *25*(4), 351-357.

Nezlek, J. B. (2008). An introduction to multilevel modeling for social and personality psychology. *Social and Personality Psychology Compass*, *2*(2), 842-860.

Organisation for Economic Co-operation and Development (OECD). (2009). Is work the best antidote to poverty?. *Employment Outlook 2009*, 166-210.

Organisation for Economic Co-operation and Development. (2013). *OECD framework for statistics on the distribution of household income, consumption and wealth*. OECD Publishing.

OECD. (2019). *OECD labour force statistics 2019*. OECD publishing, Paris.

Oesch, D. (2015). Welfare regimes and change in the employment structure: Britain, Denmark and Germany since 1990. *Journal of European Social Policy*, *25*(1), 94-110.

Özel, I. D., & Yıldırım, K. (2019). Political consequences of welfare regimes: Social assistance and support for presidentialism in Turkey. *South European Society and Politics*, 1-27.

Palier, B. (2010). Continental Western Europe. In Castles, F. G., Leibfried, S., Lewis, J., Obinger, H., & Pierson, C. (Eds.), *The Oxford handbook of the welfare state* (pp. 601-615). Oxford: Oxford University Press.

Papadopoulos, T. (2005). The recommodification of European labour: Theoretical and empirical explorations. *Bath: European Research Institute Working Paper WP-05-03*.

Pierson, C., & Leimgruber, M. (2010). Intellectual roots. In Castles, F. G., Leibfried, S., Lewis, J., Obinger, H., & Pierson, C. (Eds.), *The Oxford handbook of the welfare state* (pp. 32-44). Oxford: Oxford University Press.

Pierson, P. (1995). *Dismantling the welfare state?: Reagan, Thatcher and the politics of retrenchment*. New York, NY: Cambridge University Press.

Pierson, P. (1996). The new politics of the welfare state. *World politics*, *48*(2), 143-179.

Polanyi, K. (1957). *The great transformation*. Boston, MA: Beacon Press.

Powell, M., & Barrientos, A. (2004). Welfare regimes and the welfare mix. *European journal of political research*, *43*(1), 83-105.

Powell, M., & Barrientos, A. (2011). An audit of the welfare modelling business. *Social Policy & Administration*, *45*(1), 69-84.

Powell, M., & Kim, K. T. (2014). The 'chameleon' Korean welfare regime. *Social Policy & Administration*, *48*(6), 626-646.

Powell, M., Kim, K. T., & Kim, S. W. (2019). The puzzle of Japan's welfare capitalism: a review of the welfare regimes approach. *Journal of International and Comparative Social Policy*, 1-19.

Pradella, L. (2015). The working poor in Western Europe: Labour, poverty and global capitalism. *Comparative European Politics*, *13*(5), 596-613.

Rice, D. (2013). Beyond welfare regimes: from empirical typology to conceptual ideal types. *Social Policy & Administration*, *47*(1), 93-110.

Room, G. (2000). Commodification and decommodification: a developmental critique. *Policy & Politics*, *28*(3), 331-351.

Rostila, M. (2007). Social capital and health in European welfare regimes: a multilevel approach. *Journal of European Social Policy*, *17*(3), 223-239.

Schiller, B. R. (2003). *The economics of poverty and discrimination*. 9th edition. New Jersey, NJ: Pearson Education.

Schröder, M. (2013). *Integrating varieties of capitalism and welfare state research: A unified typology of capitalisms.* New York, NY: Palgrave Macmillan.

Scruggs, L. A. (2014). Social welfare generosity scores in CWED 2: A methodological genealogy. *Comparative Welfare Entitlements Dataset Working Paper*, *1*, 1-19.

Scruggs, L. A., & Allan, J. P. (2006). Welfare-state decommodification in 18 OECD countries: a replication and revision. *Journal of European Social Policy, 16*(1), 55-72.

Shinkawa, T. (2013). Beyond familialism? Welfare regime transformation in Japan. In Magara, H., & Sacchi, S. (Eds.), *The politics of structural reforms: Social and industrial policy change in Italy and Japan, Cheltenham,* (pp. 171-191). Northampton, MA: Edward Elgar Publishing.

Sim, S. Y. (2016). *Comparative study on macro causes of working poverty: Focusing on two-parent households in OECD countries* (No. 676). LIS Working Paper Series.

Sinn, H. W. (1995). A theory of the welfare state. *Scandinavian Journal of Economics*, 95 (4), 495-526

Smith, E. J. (2006). The strength-based counseling model. *The counseling psychologist*, *34*(1), 13-79.

Snijders, T. A., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. 2nd edition. Thousand Oaks, CA: Sage Publications.

Social Policy Indicators (SPIN). (2020). Social Citizenship Indicator Program (SCIP). Retrieved 5th June, 2020, from https://www.spin.su.se/datasets/scip.

Stephens, D. J. (2010). Social rights of citizenship. In Castles, F. G., Leibfried, S., Lewis, J., Obinger, H., & Pierson, C. (Eds.), *The Oxford handbook of the welfare state* (pp. 511-525). Oxford: Oxford University Press.

Strier, R., Eisikovits, Z., Sigad, L., & Buchbinder, E. (2016). Working men views of poverty: Ethnic perspectives. *Men and Masculinities*, *19*(5), 480-502.

Svallfors, S. (2004). Class, attitudes and the welfare state: Sweden in comparative perspective. *Social policy & administration*, *38*(2), 119-138.

Swaffield, J., Snell, C., Tunstall, B., & Bradshaw, J. (2018). An evaluation of the living wage: identifying pathways out of in-work poverty. *Social Policy and Society*, *17*(3), 379-392.

Thiede, B. C., Lichter, D. T., & Sanders, S. R. (2015). America's working poor: Conceptualization, measurement, and new estimates. *Work and Occupations*, *42*(3), 267-312.

Titmuss, R. M. (1974). What is social policy?. In Abel-Smith, B., & Titmuss, K. (Eds.), *Social policy* (pp. 24-32). New York, NY: Pantheon Books.

Torraco, R. J. (2016). The persistence of working poor families in a changing US job market: An integrative review of the literature. *Human Resource Development Review*, *15*(1), 55-76.

Van Winkle, Z., & Struffolino, E. (2018). When working isn't enough: Family demographic processes and in-work poverty across the life course in the United States. *Demographic Research*, *39*, 365-380.

Wenzelburger, G., Zohlnhöfer, R., & Wolf, F. (2013). Implications of dataset choice in comparative welfare state research. Journal of European Public Policy, 20(9), 1229-1250.

Woltman, H., Feldstain, A., MacKay, J. C., & Rocchi, M. (2012). An introduction to hierarchical linear modeling. *Tutorials in quantitative methods for psychology*, *8*(1), 52-69.

World Bank, Poverty & Equity Data (2019). *Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)* [Data file]. Retrieved from https://data.worldbank.org/topic/poverty?end=2018&start=1960

World Health Organization. (2020). *WHO coronavirus disease (COVID-19) dashboard.* Retrieved from https://covid19.who.int/

Yu, J. J. (2006). Understanding and application of hierarchical linear model. *Korean Journal of Child Studies*, *27*(3), 169-187.

Yu, S., Chau, C. M., & Lee, K. M. (2015). Using defamilisation typologies to study the Confucian welfare regime. *Journal of International and Comparative Social Policy, 31*(1), 74-93.