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Trapped in Dualization: Labor Market and Social Protection for Low-income Workers from the Perspective of Public Benefit Use

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Trapped in Dualization: Labor Market and Social Protection for Low-income Workers from the Perspective of Public Benefit Use

By

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Abstract

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Labor markets have been segmented typically based on skill-levels of workers in the United States and in many other economically advanced countries. Since welfare reform 1996, the welfare system in the United States has increasingly linked labor market participation to the eligibility for public benefits. This development signals a shift in public responsibility for economic security and social protection to the private sector and employers. However, welfare recipients are mostly low-income workers and, as outsiders in the labor market, they often have disadvantages, which include limited employment benefits. Therefore, the relationship between labor market and social protection for low-income workers has continuously increased economic inequality and disparity in social protection in the United States.

This dissertation research draws on the theoretical concepts of dualization embedded in the structures of the labor market and social protection derived from the welfare state. Focusing on economic disparities and social protection for low-income workers, this study analyzes public benefit use by low-income workers and the effects of changes in economic conditions. Specifically, the analyses focus on the extent to which low-income workers use public benefits and the way these choices are related to public and private employment sectors and employer-based private benefits in particular. It also examines how different characteristics of individual, family and household, and other labor market components are associated with public benefit use by low-income workers; the analyses include the differences between household and state levels regarding the public benefit use. Statistical analyses for these inquiries involve cross-sectional and multilevel modeling of large scale data sets.

The findings of this study show that many low-income workers cannot obtain economic security and adequate social protection through employers, given current labor market structure. Also, these findings indicate that the employment conditions and benefits provided through employers are already determined by the low-level segmentation in the labor market, rather than the public and private sectors in which low-income workers are engaged. Thus, the dualization process has increased the inequality between insiders and outsiders, which strengthens the social divide.

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Introduction

One major issue in the development of the U. S. welfare state involves the debate regarding deserving and undeserving recipients of social benefits. In 1996, welfare reform was a political response to this issue, which has promoted labor market participation of welfare recipients; however, this change in social welfare policy did not thoroughly consider whether the labor market offered sufficient job opportunities or whether job seekers had the required qualifications for available positions. Consequently, obtaining employment does not secure stable living conditions for all workers and their families.

Why would the workers engaged in certain occupational categories still need economic support? It is a simple question, but there are several responses based on different circumstances. Some of the responses focus on the level of skills required in the labor market, which is a crucial element in determining the level of earning potential. Others may reflect the dysfunction of social and economic policies that increase economic inequality.

This dissertation analyzes workers' needs for additional economic support by focusing on the labor market structure and the social protection system in the United States. Specifically, this study examines the way dualization embedded in social and economic policies affects public benefit use among low-income workers.

The first part of this dissertation reviews existing research on the structure of the labor market (Chapter 1), income distribution and social expenditures (Chapter 2), and the social protection system in the United States (Chapter 3). The second part presents theoretical concepts and research design used in this study (Chapter 4) and describes analyses examining the association between the labor market and social protection for low-income workers (Chapter 5). Finally, study implication are discussed in Chapter 6.

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Chapter 1. Understanding Labor Markets for Low-Income Workers: Segmentation and Insecurity

The labor market has multi-dimensional aspects in the economy and in society. It interacts with product markets, involves economic and social institutions, and controls labor prices (wages). Positioning in the labor market is meaningful because employment positions have considerable influence on individual economic and social classes. For low-income workers and their families in particular, earned income through employment is a major economic source used for their living costs. On the other hand, job positioning (or job entrance) may restrict eligibility for social benefit programs offered by governments.

This chapter discusses the ways different types of segmented labor markets can be defined and which features of the changes in the labor market have affected the process of labor market segmentation. It also describes the consequences low-income workers may encounter in the diversified subgroups of the labor markets.

1.1 Segmentation in the Labor Market

Labor markets function as major components of economic systems, where wages are defined as the "price of a definite commodity of labor power" through the interactions between workers and employers, and the labor is the workers' own life activity to secure the necessary means of subsistence (Marx, 1968, p. 76). The price of labor, a major component of product costs, is determined by the cost of production and the labor hours required for commodity production. In labor economics, the price of labor is determined based on workers' productivity, which is substantially related to the skill levels of individual workers. The skill levels are major causes of wage differentials.

In terms of wage differentials, labor economists have indicated that technology development contributes to an increasing demand for more skilled workers, which decreases the demand for non-skilled and less-skilled workers (Acemoglu, 2002). As Acemoglu (2002) argued, the different skill levels cause disparities in human capital development and affect inequality in wage determination because new technology causes downward effects on the productivity of less skilled workers. In other words, while technology development provides highly skilled workers with opportunities for upward mobility and better positions in the labor market accompanied by wage increases, less skilled workers, who generally have lower educational backgrounds, cannot benefit by moving upward, consequently remaining in the same low position in the labor market (Acemoglu, 2002).

On the other hand, from a macro-perspective, *globalization* is often mentioned when discussing a skill-based labor force and wage inequality. To summarize the argument and the impact of globalization on the labor market, the trends of promoting international trades and the global system that supports transfers of capital and labor across nations make it possible to generate less skilled, low-income workers and create an economic and social environment in which less skilled workers usually have disadvantages, particularly in economically advanced countries. Consequently, expanding the geographic range of the economic and labor markets eventually affects the work conditions of low-income workers, such as predominant inequality in earnings and physically unhealthy workplace circumstances.

Along with wage differentials based on different skill levels in the labor market, *segmentation* is another important theoretical concept applied in order to explain characteristics of a low-wage labor market in particular. The segmentation theory of the labor market considers divergent subgroups in labor markets, depending on individual workers' demographic characteristics, job natures involving different levels of skills and work experience, types of industries, and employment conditions. In general, these subgroups are differentiated based on job attributes, such as different skills and work experience (Pigou, 1945). Therefore, social and economic mobility tend to be relatively limited between subgroups in the labor market (Stinchcombe, 1979; Berger & Piore, 1980).

On the other hand, based on studies that examined the perspective of American capitalism in the labor market, Reich, Gordon, and Edwards (1973) argued that political and economic forces have been the fundamental sources that have increased fragmentation and perpetuated the segmentation of labor markets in the United States. They noted that the segmentation of labor markets should be examined by identifying the endogenous features given the economic system. Accordingly, Reich et al. (1973) classified labor market segmentation processes into four different subgroups, which correlate to one another in the process of labor market segmentation.

As most scholars agree, Reich et al. (1973) first noted the dual labor market theory (primary and secondary markets) and then classified "independent" workers and "subordinate" workers in the primary sector. Independent jobs require multi- and high-quality responsibilities, while subordinate jobs involve standardized work with adjunct characteristics. Further, Reich et al. (1973) attached *race* and *gender* components to labor market segmentation and labelled "race-typed" jobs in the primary sector and male or female jobs in the overall labor markets. These reclassified work types are differentiated from typical work in the secondary segment in which minority workers engage. Race-typed jobs reflect the segregation tendency in the American economic and political context, and gender-based segments have caused and increased wage gaps between male and female workers. Traditionally, female-dominant jobs offer lower pay than male-preferred jobs because females are often engaged in domestic labor and service jobs.

After a careful examination of the subgroups segmented by Reich et al. (1973), it is clear that labor market segmentation and the persistence of segmented subgroups are also associated with the structure of the labor markets as well as the internal labor market. A firm, which is an economic entity with labor demands, administrates a set of rules and regulations that control entry to the firm (new employment), work descriptions and conditions, training and promotions, and procedures for amendments of the rules and regulations if needed (Vincents & Robinson, 1974).

The studies of Doeringer and Piore (1971) specifically focused on the internal labor market from theoretical perspectives. According to their argument, internal labor market has been developed to protect the employment status of current workers who are already members of a firm from competition in the external labor market and to secure job stability and promotion opportunities in the firm. In essence, given the established rules and regulations of the internal labor market, current workers intend to preserve the competitive benefits in the labor market as well as in the industry; however, Doeringer and Piore (1971) noted that the labor conditions and requirements of the internal labor market should be adjusted to reflect variations in the labor supply of the external labor market.

Consequently, the process of the internal labor market is conducive to solidifying labor market segmentation, and it affects labor market mobility among segments. Reflecting the argument of Reith et al. (1973), it is more likely that internal labor markets are prevalent in the primary sector and favorable to workers in independent positions. Therefore, a well-structured internal labor market negatively affects workers in lower subgroups of labor markets and prevents workers in the secondary sector as well as subordinate workers from upward mobility in the labor market.

1.2 Dual Labor Market: Insiders-Outsiders

Among the segmentation theories of the labor market, a dual labor market—that is, the stratification of the primary and the secondary labor markets—is the most notable theoretical framework (Doeringer & Piore, 1971). The primary labor market tends to require considerable work responsibilities, but it offers stable jobs that provide high wages and better work conditions. In contrast, the secondary labor market involves the lower subdivisions where labor intensive jobs prevail, and thus employers expect less productivity and less labor costs than in the primary labor market (Bulow & Summers, 1986; Cain, 1976). Scholars who study labor market divisions agree that the disadvantaged, who have low socioeconomic statuses and health problems, are more likely to be engaged in the lower-level, secondary labor market. Therefore, as scholars have indicated, low-wage workers with low skills face barriers more often in pursuing economic well-being and upward mobility in society.

Along with the theoretical viewpoint of labor market segmentation, the concepts, *insiders* and *outsiders* are important concepts to examine (Davisson & Naczyk, 2009). “Outsiders” refer to as those who are excluded from major activities in different areas in society, including social, economic, and political contexts. The term *outsiders* was originally associated with social exclusion; outsiders can be understood as the consequence of social exclusion. The concepts of social exclusion and outsiders originated in European countries in the 1970s and drew public attention, particularly in European societies. Nevertheless, it is noteworthy that post-industrial labor markets in all advanced countries face similar structural trends, increasing segmentation, atypical and unsecured employment, and unemployment. That is, non-standard work is apparently differentiated from standard work, and atypical employment is extensively gender-segregated in many countries (Hausermann & Schwander, 2010).

Labor market insiders and outsiders were initially identified by Lindbeck and Snower (1988; 2001). The definition of insiders refers to incumbent employees in the internal labor market who are protected from competitive external labor markets and have stable and secured positions based on internal rules and regulations. Consequently, outsiders are referred to as workers who do not have the benefit of employment protection or who are engaged in the informal sector with unsecured jobs, not only those simply unemployed (Lindbeck & Snower, 1988; 2001).

To justify their argument, Lindbeck and Snower (1988; 2001) identified labor turnover cost as the most decisive source of insider power in the labor market. In short, incumbent workers have been trained for specific jobs, and their experience and knowledge of specific work increase the turnover costs, which is part of operating costs that employers must consider. Therefore, labor turnover costs imply market power for insiders, which provides them with reasoning for job security, negotiation power for wage increases, and promotions, while the insider market power has a counter-effect on outsiders by increasing insecurity (Lindbeck & Snower, 2002). Similarly, skills can be considered the critical source of insider power rather than labor turnover costs (Solow, 1985); however, both sources have similar impacts on insider protection and on persistent unemployment for outsiders.

The concept of insiders and outsiders was initially introduced based on employment status, including new entrants and the employed versus the unemployed; however, due to changes in the structure and institutions of labor markets, scholars have expanded the definition of outsiders and specifically classified it to include particular subgroups, such as workers with atypical contracts (e.g., under-employment), involuntary workers (fixed-term and part-time workers), nonstandard workers, and temporary and contingent workers (Davidsson & Naczyk, 2009).

In sum, scholars who have studied labor economics and political economy agree that the labor market has been increasingly segmented and that job insecurity and instability have increased, particularly for low-wage workers in the lower subsectors. On the one hand, studies on the dual labor market theory mostly address inequality based on wage and employment conditions between workers engaged in the primary and the secondary labor markets. On the other hand, the theoretical model of insiders-outsiders underscores the rift between the in-group and the out-group, which is divided by employment status and employment types. Outsiders have also been subdivided, reflecting changes in the labor market (Davidsson & Naczyk, 2009). Accordingly, based on the segmentation theory (a parent theory of the dual labor market), the term “outsiders” may refer to workers in the secondary labor market (Davidsson & Naczyk, 2009).

The dualized characteristic of labor markets should also be considered from a different viewpoint, such as vertical segmentation, which identifies work engagement with public and private employment sectors. Research on the vertical segmentation of labor markets is relatively limited, unlike research on primary and secondary markets within the dual labor market framework. Harrison and Osterman (1974) examined the characteristics of the public employment sector, particularly with respect to the level of earnings. According to their study results, by and large, workers in the public sector earned more than those in the private sector; the earnings of nonwhites were greater than the salary of whites in the public sector (Harrison & Osterman, 1974). Notably, Harrison and Osterman (1974) found that women and black men were the primary beneficiaries of public employment in consideration of their average wages and that the earning advantage was also given to African Americans with extremely low income levels.

To summarize, labor market segmentation, especially in the dual labor market model, addresses disadvantages and persistent inequalities that low-skilled workers face in the labor market. More specifically, the dual labor market model has been applied as a theoretical framework for research on the low-wage labor market; however, few recent studies have specifically examined the vertical segmentation of labor markets distinguished by public and private sectors and its association with low-wage employment. Regarding poverty and the economic well-being of wage earners, workers engaged in low-wage labor markets are more likely to fall below poverty lines and are vulnerable to becoming the working poor. It is thus beneficial to examine how the transformation of labor markets influences the ordinary lives of the working poor and how public support and private benefit programs through employers respond to the transformation of the labor market for low-income workers.

1.3 Characteristics of Labor Markets in Advanced Countries

1.3.1 Service sector and gender segregation

During the process of economic development, the service sector has expanded employment, especially for the female labor force (Golsch, 2005; Klijzing, 2005). This labor market trend is predominant both in the United States and the United Kingdom, as they share common characteristics of welfare states. Even in other European countries, employment in the service sector expanded until the late 1990s, although there are some variations in the labor market shift (Golsch, 2005).

Employment in the service sector has promoted gender segregation, which causes gender inequality in wages and incentives in the labor market in many countries, including the United States and the United Kingdom (Golsch, 2005). This trend is closely associated with the increase in non-standard and flexi-workers, which are general employment types in the service sector, and young and female workers tend to participate more often in the particular occupational classification with relatively low wage and benefits compared to the compensation of their counterparts (Golsch, 2005).

Furthermore, the service sector is classified as a “tertiary labor market,” where there is a large portion of low-skilled and labor-intensive services, and this classification implies changes in the nature of jobs from industries to services (Esping-Andersen, 1999). A convincing account of the nature of jobs indicates that labor-intensive services are fundamentally domestic work and include commercialized tasks that low-skilled females can easily perform (Esping-Andersen, 1999). As noted, the labor market circumstances in the United States are similar to those in the United Kingdom, and these comparable phenomena in the labor market and employment conditions for low-income workers provided the motivation of this study.

1.3.2 Labor market flexibility and deregulation

Golsch (2005) was particularly interested in comparative studies among European countries regarding the impact of labor market insecurity on the work and family lives of men and women. Golsch (2005) noted the prevalent phenomenon that employers have requested flexibility in the labor market to meet the demands of multi-skilled labor, the changes in industries toward global competition, and a "technology- and knowledge-based economy" (p. 68). On the supply side, educational expansion has contributed not only to enhancing higher education for the labor force with respect to high- and multi-skilled labor but also to increasing the labor market participation of females (Golsch, 2005). In essence, reflecting changes of demand and supply in the labor market and the transformation of the macro-economic structure to pursue global relations, employers tend to take advantage of the flexibility of work arrangements and insecurities in wage and labor contracts. Consequently, the rising demand for flexibility and the deregulation of industries transfer economic risks to employees.

These trends are not limited to European countries; rather, they are widespread in the United States. Hacker (2006) agreed with Golsch's (2005) argument on economic insecurity, particularly within the social and economic contexts of the United States. The economic restructuring and reorganization of corporations in the United States which have been occurring since 1980s have affected unstable working conditions and caused economic insecurity; the impact of these structural changes in the industry has eventually increased inequalities in society. Growing workplace insecurity is one of the new economic risks that has negatively affected the sustainability of contemporary families as well as the social benefit system (Hacker, 2006). Hacker (2006) noted that the economic instability of American families has risen substantially faster than the inequality of families' incomes, which creates higher barriers against upward mobility than in prior generations. In sum, promoting flexibility and increasing insecurity in the labor market eventually transfer the economic risks to employees and emphasize individual responsibilities rather than roles of governments for the economic security.

This dissertation study supports Hacker and Golsch's arguments and shows that income instability (in the flexible labor market) is considered a significant indicator of economic risks and that the new economic and social risks largely affect the choices of benefits for families as well as society as a whole.

The demand for flexibility in the labor market means that firms request deregulations of employment policies from governments, such as the employment protection system, including wage elasticity, temporary employment, and layoffs, that industries may require to maintain their business operation under fluctuations in business cycles and changes in the economic environment. *Flexibility* may also be interpreted with respect to various dimensional forms, and labor market flexibility can be classified into four different types (Golsch, 2005). *Numerical flexibility*, a commonly recognized type, refers to the adjustment of the number of employees through temporary contracts and layoffs, and *functional flexibility* refers to the possibility of shifting between different job placements, usually within firms. Similarly, adaptabilities in wage variation (*wage flexibility*) and in working hours (*temporal flexibility*) are also general types of flexibility that occur in the labor market. Among the four types of flexibility, numerical flexibility and temporal flexibility may have a relatively stronger influence on the job security of low-income workers than functional and wage flexibilities because low-income, less-skilled workers are likely to be limited to a specific range of job functions and descriptions compared with middle- and high-skilled workers.

Increasing labor market flexibility is a major cause of persistent inequality in the labor market, even under a good economy with employment growth. Freeman and Gottschalk (1998) argued that decreases in hourly wages for less skilled workers and a huge gap in employment benefits (e.g., fringe benefits, private pension, and health insurance) between less skilled and high-skilled employees have a greater effect on persistent and rising inequality than the volume of real salaries for skilled workers. In essence, discrepancies in overall work hours and unreasonable disparities in hourly wages (and annual salary) for workers with different levels of skills are crucial components that should be examined.

Regarding labor market flexibility and deregulation, scholars have also focused on the magnitude of deregulation and compromises for the flexibility of particular regulations in industry and labor markets as a whole. Research on this topic is critical because the deregulations that are eventually accepted through appropriate economic and political processes impact individual workers' careers.

From the perspective of labor demand, employers attempt to reduce labor costs for both insiders and outsiders in the labor market by avoiding rigid employment protection systems (Golsch, 2005). Given flexible regulations on employment protection, the outsiders, especially the young, the unemployed, and female workers who want to (re-)enter the labor market, are more likely to face obstacles when entering the labor market if they cannot manage childcare obligations because employers may not want to provide childcare for their employees. On the other hand, the insiders, who have already obtained permanent work positions, are more likely to take advantage of the rigid employment protection system for career development and advancement. As a result, labor market inequality and the social exclusion of outsiders would increase, while long-term employment relationships among insiders would be solidified. Thus, the unemployment duration for outsiders becomes longer (Golsch, 2005). If deregulations and flexible employment policies foster a closed employment protection favoring labor market insiders, individuals who are outside of the labor market with newly established careers are unlikely to achieve social and economic mobility through employment. Moreover, low-income workers would have more disadvantages in the closed system with respect to employment and the labor market than middle- and high-income workers.

Esping-Andersen (1999) presented a parallel argument on labor market inequality and the association with the skill levels of individual workers in post-industrial societies. According to his argument, labor market transformation shows a convergence characteristic. That is, professional and semi-professional occupations continue to increase; however, labor jobs decrease, and middle-skilled jobs are static (Esping-Andersen, 1999).

Therefore, while the expansion of high-skilled and professional jobs provides a pathway to upward mobility, the less-skilled workers continue to encounter barriers on the road to obtaining a secured economic status. According to the classification of welfare regimes (Esping-Andersen, 1990), the United States is a representative of liberal welfare states and maintains market-oriented employment policies by limiting public social assistance programs. In the United States, low-income workers are mostly engaged in the private sector, where job security is not guaranteed nor do low-income workers secure sufficient welfare through employment benefits or through public benefit programs. Further, it is notable that in the American economy, less-skilled service positions are filled by specific ethnicities (for example, Hispanics), rather than labelled as female-oriented work, which is more likely to be classified as a social democratic welfare regime in other advanced countries (Esping-Andersen, 1999).

Along with an understanding of the multi-dimensional perspectives of labor market issues, it is also important to examine the relationship between unsecured employment and less-skilled, low-income workers. The employment status (including unemployment and unstable and unsecure conditions of employment) of a primary wage earner, predominantly males in families, often determines the employment and characteristics of jobs for secondary wage-earners (who are most likely to be women or young) in families (Golsch, 2005). To summarize, secondary wage earners often have constraints in participating in the labor market because they are easily relegated to flexible and unsecure jobs in the less-skilled and low-wage labor market.

1.4 Public versus Private Employment and Low-Income Workers

Public and private employment sectors, which are referred to as the vertical segmentation of the labor market, can affect the employment positions and work conditions of low-income workers. In general, the public sector involves various types of public services offered from governments, including education, healthcare, safety and security, utilities, and infrastructure (Harrison & Osterman, 1974). On the other hand, the private sector usually refers to business and industries where organizations seek profits, but it may also include nonprofit organizations that are not associated with the government. In economically advanced countries, namely welfare states, the expansion of social services tends to increase growth in the public employment sector, particularly in countries pursuing universal welfare states. Comparatively, the United States did not show notable growth of the public employment sector in the process of welfare state development (Rosen, 1996). Likewise, other nations that manage selective welfare programs from the residual perspective rather than universal programs have a similar phenomenon in the public employment sector.

Traditionally, employees of organizations in the public sector tend to have the benefits of job tenure and job stability after a probationary period compared with employees in the private sector (Harrison & Osterman, 1974). Expanding the scope of study on employment sectors, Blank (1985) focused on how workers chose employment sectors for their jobs and identified the pertinent factors that influence their decision using data from the Current Population Survey (CPS) conducted in May 1979. Blank (1985) first discussed previous studies that indicated considerable wage differences in employment sectors: a) public sectors tend to offer higher wages than private sectors due to the influence of the *prevailing wage principle* applied to jobs in governmental units; b) the wage levels of *protected groups* (i.e., women, nonwhites, and veterans) are higher in public sectors than in private sectors; and c) female workers earned relatively lower wages than male workers in all sectors.

Given the wage differences in employment sectors, Blank (1985) found that the portion of the labor force with higher education attainment and more experience were more likely to choose a job in the public sector, while those with lower education attainment appeared to select employment in the private sector. She also noted that female workers were more often employed at the state-level government, but nonwhites and veterans were employed in federal jobs. Although

Blank (1985) acknowledged that wage differences certainly existed in different employment sectors, she did not examine the possible differences in other factors unrelated to wage levels. In later years, other scholars who researched employment sectors examined flexibility in public employment (e.g., Forstater, 1998) and gender-specific comparisons using cross-national data. (e.g., Gornick & Jacobs, 1998).

1.4.1 Inequality in employment and earnings

In most countries, the private sector provides more employment opportunities than the public sector because industry plays an important role in creating jobs that develop the economy, and the volume of the private sector employment is greater than the public sector in modern capital society. Therefore, the employment rate and unemployment rate are considered major components of economic indicators that also imply the degree of economic well-being for individuals and families.

Although there are more employment opportunities in the private sector, the labor market where private entities have predominant control over employment policies and regulations can cause disparity issues in employment due to differences in the skill levels of workers, which are relatively higher than in the public employment sector. The most significant issues that disadvantaged workers face are inequalities in earnings and fringe benefits (Freeman & Gottschalk, 1998). Freeman and Gottschalk (1998) indicated that the earning gap between high- and low-skill workers has continued and expanded even in years when economic and employment growth were prominent. To explain the crucial reason of raising inequality, they noted decreases in real earnings for low-wage workers, rather than the advantage of enormous real earnings for workers with more skills and experience; however, considering Freeman and Gottschalk's (1998) argument was based on economic conditions before the 1990s, it is certainly possible that income inequality has continued to expand.

Piketty (2014) indicated that in the United States, the inequality of income distribution has increased more than in Europe during the 20th Century. Piketty (2014) examined the dynamics of inequality over the past years as well as variations in the structure of inequality across nations. It is notable that in 2013, the United States represented less wealth inequality than Europe in 1913, but there has been a higher inequality in labor income than in Europe (Piketty, 2014). In addition, Piketty (2014) acknowledged that in the United States, demographic growth may be a more influential factor than inherited wealth; on the other hand, he indicated that the inequality of labor income in the United States can provide a critical source of inequality and social class. These arguments also suggest that income growth in the upper levels is possible due to a decrease in tax rates for higher incomes and an increase in the bargaining power of the top management level (Piketty, 2014).

In sum, economic success in the past years in the United States has not created balanced success for workers with different skill levels and income levels. While skilled workers have been the beneficiaries of economic growth, the middle and lower groups of workers have not benefitted from economic growth or earning distribution (Freeman & Gottschalk, 1998).

1.4.2 Public employment, redistribution, and the welfare state

Inequalities in the employment and labor market can be more problematic for the disadvantaged population. Although several policies have been implemented to support employment for the disadvantaged, the effectiveness of those policies has been limited, and they have lacked the capacity to solve inequality issues or change the constitution of the labor market in the United States. To determine the reasons that the implemented policies have not been effective, Freeman and Gottschalk (1998) investigated the nature of the demand-oriented policies that were established based on employers' demands for labor. They noted that the demand-oriented policies are micro-economic approaches and do not affect macro-economic problems, such as inflation.

A wage subsidy for employers who hire the disadvantaged is one of the most common policies designed to secure employment for the disadvantaged (Freeman & Gottschalk, 1998). The subsidy policy aims to reduce the hiring costs of low-wage workers, and wage subsidies have contributed to increasing labor demands for the disadvantaged to a modest extent by targeting the people who want to participate in the labor market (Freeman & Gottschalk, 1998). Similarly, tax support, which reduces payroll taxes paid by employers, is another approach used to encourage employers to hire disadvantaged workers (Freeman & Gottschalk, 1998); however, according to Freeman and Gottschalk (1998), the effectiveness of the subsidy policy was not productive when the subsidies targeted disadvantaged locations instead of disadvantaged people.

On the other hand, employers can be required to offer mandated wages and benefits to low-wage workers. The minimum wage policy is one of the most well-known labor market institutions to control wages for low-wage workers, and health insurance is another typical mandated benefit of employment. Freeman and Gottschalk (1998) noted that the minimum wage and mandated benefit policies often raise trade-off issues with other compensation packages related to employment. To meet the required wage levels and mandated benefits, employers can reduce other types of labor costs and decrease employment opportunities. Moreover, the effect of minimum wage policy is limited when the minimum wage levels are low, which is also a crucial issue in the United States (Freeman & Gottschalk, 1998).

Other scholars have focused on the relationships between public employment, economic markets, redistributive function, and social welfare. Regarding labor demands in the market, public employment can influence the level of hiring in the private sector of industries. Based on the pattern of employment in economically advanced countries, particularly during the period of 1960 to 2000, public employment induced a crowding-out effect on employment in the private sector (Algan, Cahuc, & Zylberberg, 2002). In other words, job opportunities in the public sector can affect overall employment in the private sector based on the supply or demand of the labor market; however, the degree of the impact on the private employment sector is highly subject to the extent that the public sector output can substitute for the productivity of the private sector (Algan et al., 2002).

Therefore, increasing public employment may not necessarily lead to reducing unemployment in the overall labor market. From 1960 to 2000, public employment increased unemployment in economically advanced countries that joined the Organizations for Economic Cooperation and

Development (OECD) (Algan et al., 2002). Further, Algan et al. (2002) suggested that public employment has a more positive impact on employment in the private sector on a short-term basis. In sum, the substitutability of labor in the public and private employment sectors can be an important factor in determining the impact of public employment in the labor market.

From a sociology perspective, it is often assumed that governments are responsible for maintaining social equity, and income and employment are regarded as intervention strategies applied to support the economic protection of workers from the market power in the private sector (Lobao & Hooks, 2003). In other words, governments can create employment in the public sector for workers who have limited power and opportunities to find employment in the private sector. Similarly, states can provide welfare transfers to support income security for the disadvantaged population. Thus, public employment is considered an intervention that directly influences demand and supply in the labor market, while welfare transfer is a form of public benefits through government administration systems in the public sector.

Discussions about the political-economic aspects of public employment also include the relationship between public employment and public expenditures as well as the dynamics of public employment. Historically, while public employment for production and market services has changed based on the employment conditions in the industry, employment in social services has represented growth trends, particularly in line with the growth of wealth in states (Cusack, Notermans, & Rein, 1989). This reflects the evolution of welfare states across nations. From a political-economy perspective, public employment is recognized as an intervention approach designed to diminish problems in the labor market and to maintain established policies (Cusack et al., 1989). In short, governments can use public employment as an instrument in political-economic circumstances that require government involvement to mediate matters for various parties of interest.

Likewise, it is plausible that politicians consider public employment to be a means to serve redistributive purposes. Alesina, Baqir, and Easterly (1998) supported this argument and examined public employment status focusing on cities in the United States. They found that public employment is more prevalent in cities with a higher income inequality when controlling for other factors that influence public employment (Alesina et al., 1998). For instance, labor power, participation in union membership, and a left-inclined government can positively influence the growth of employment in the public sector (Cusack et al., 1989); however, as Cusack et al. (1989) noted, these determinants often have an inverse relationship with the expansion of public employment when a country increasingly depends on the international economy.

1.4.3 Public versus private employment sectors

Regardless of the classification of public and private sectors, employment and labor markets fluctuate according to the business cycle. Still, the variations of each employment sector display in different ways. Quadrini and Trigari (2007) argued that employment and wages in the public sector are less procyclical than in the private sector. They found that employment and wages are systematically determined by profit maximization and negotiation (i.e., *Nash bargaining*) for an adjusted equilibrium of the profits among market players (that is, employees or potential workers in the labor market) when they face selection problems due to multiple balancing points for their target price (Quadrini & Trigari, 2007). For instance, two players can gain their portions if the total profit amount requested by the players is within the pre-assigned available amount. On the contrary, neither player can gain if the requested total profit amount is greater than the available amount (Nash, 1950).

While this process is effective in the private labor market, employment and wages in the public sector are influenced by the government rather than determined by market forces (Quadrini & Trigari, 2007). Due to the external nature of government policies, employment and wages in the public sector are also less dependent on the business cycle, and more positive wage benefits are offered than in the private sector (Quadrini & Trigari, 2007). Quadrini and Trigari (2007) also noted that the characteristics of the public employment sector tend to be prominent during economic recessions in particular. Their argument was based on two assumptions: (a) employers in the private industry would refrain from hiring new employees during recessions, and (b) public employment would have wage benefits for the two reasons if wages in the private sector decrease during recessions (Quadrini & Trigari, 2007). Further, because more workers prefer public employment during recessions, job creation in the private sector would likely be reduced even after the recession, expanding the impact of the public sector on the labor market (Quadrini & Trigari, 2007). In sum, expanding the public sector and employment and wage policies in the public sector can produce more macro-economic impacts on employment in the private sector and the labor market in general.

Because the study by Quadrini and Trigari (2007) focused on the variations in employment and wages in the public and private sectors that fluctuate based on business cycles or economic conditions, the study outcomes did not identify the long-term impacts on the labor market or the economy. In addition, the wage benefits in the public sector would not be consistent for worker groups that have different skills and income levels. Instead, Quadrini and Trigari (2007) indicated that wages in the public sector in the United States have followed market mechanisms in recent years, which implies a lower volatility in the economy generated by the public employment sector. This point needs to be drawn attention to address that low-income workers would not have an advantage of employment in the public sector. Even if the market-oriented wage policy in the public sector reduces the macro-economic impact of the public sector in the private industry, a similar phenomenon can occur in the subgroups of workers in the private employment sector.

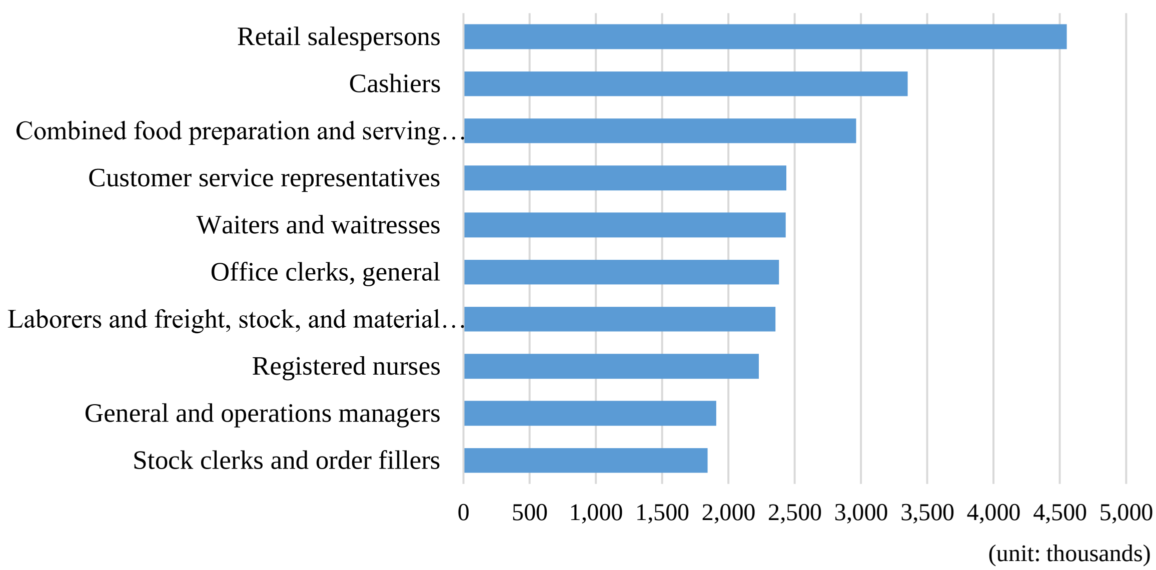
For instance, low-income workers and part-time workers are examples of the groups that have less power than other subgroups of workers in the private employment market. Low-income workers are more likely to be employed by a workplace with poor union power, and thus the wages are more sensitive to business cycles and economic conditions compared with middle- and high-income workers. It should be noted that low-income workers can have a high level of volatility, although low-income work comprises a relatively small portion of the labor market (Quadrini & Trigari, 2007).

Regarding public employment, Forstater (1998) classified the activities in the public sector as necessary and discretionary activities. A necessary activity mainly involves mandated responsibilities for public benefits and goods, while a discretionary activity refers to other government functions that do not involve urgent issues (Forstater, 1998). In short, a necessary activity can incur damage to public services if the government activity is not offered continuously, but a discretionary activity can be flexible in the fulfilment of the activity. Therefore, the public sector can use employment policies selectively based on the nature of the public activities, especially for discretionary functions that maintain flexibility in the hiring system (Forstater, 1998). Moreover, the nature of work can lead to advantages in public employment as a whole. Similarly, the nature of activities in the public sector must be considered to assess the benefits of public employment and wages because they can require differentiated criteria for the evaluation of employment sectors.

1.4.4 Occupations in the private and public sectors

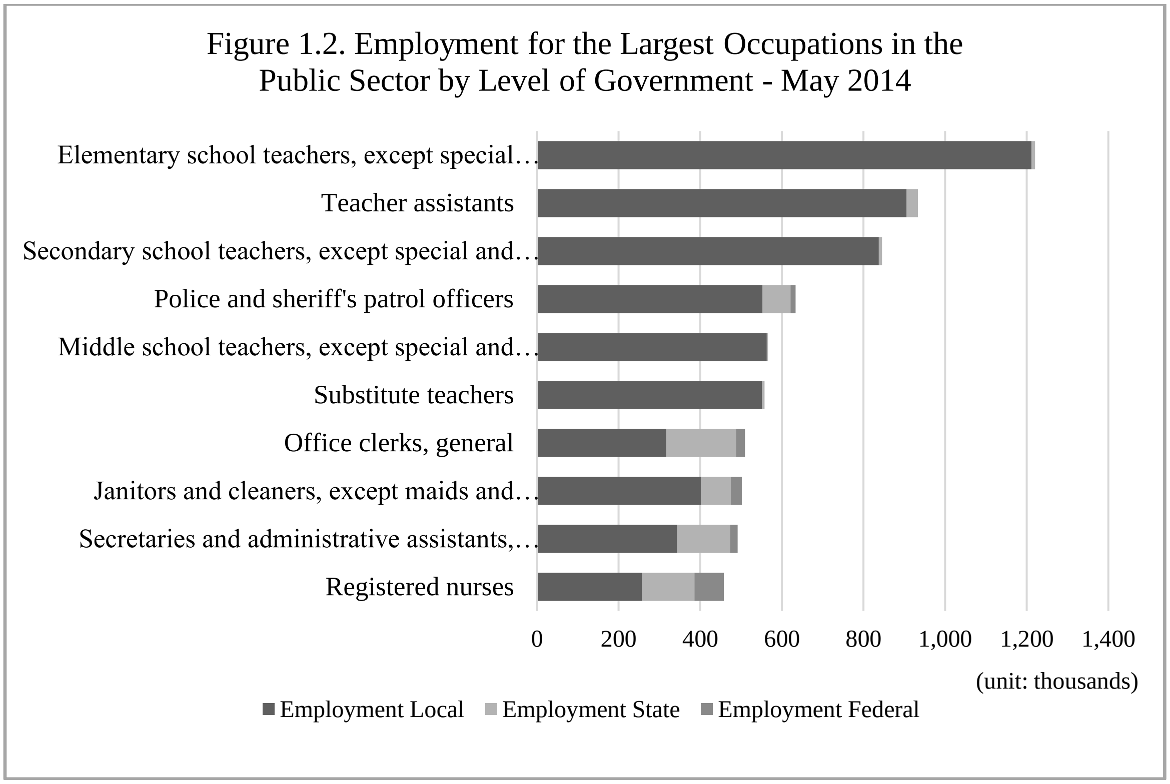
The United States Bureau of Labor Statistics provides statistical data about occupational employment and wages. The following charts present the major occupations in the private employment sector and public sector, including employment in state and local schools and hospitals.

Figure 1.1. Employment for the Largest Occupations in the Private Sector - May 2014



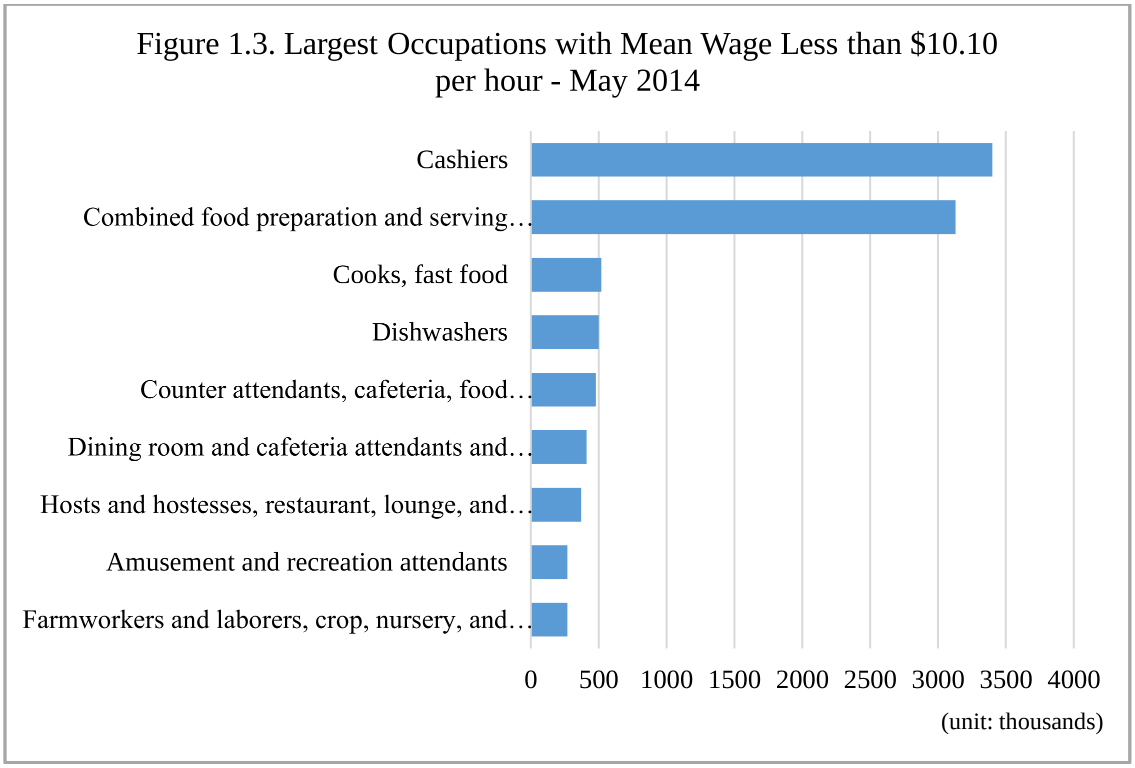
Source: U.S. Bureau of Labor Statistics (n.d.)

In the private industry, retail sales associates and cashiers comprise the largest portion of occupations, and the top five highest occupations are service jobs with low wages in the retail and food industries.



Source: U.S. Bureau of Labor Statistics (n.d.)
Notes: This data source includes state and local government schools and hospitals by level of government.

In the public sector, education and school-related jobs are predominant in the local government, while general office clerks and administrative assistants comprise a considerable portion of the state government. This chart indicates that less-skilled workers have limited opportunities to participate in public jobs in the United States.



Source: U.S. Bureau of Labor Statistics (n.d.)

For the largest portion of occupations with mean wages of less than $10.10 per hour, most low-wage workers are employed as cashiers and servers in the food industry, which also reveals why less-skilled workers in the United States are mostly employed in the private employment.

Chapter 2. Income Distribution and Redistribution Effects of Social Benefits

Income is an important factor related to economic well-being and inequalities in society. Income can be classified into various types based on the nature of the source, such as earned income, capital income, and property income. For this study, income mainly refers to earnings through employment, which is a major financial source used to maintain economic well-being for most low-income workers and their families. Earned income, a primary source for the cost of living, has been used for the criteria to determine whether people are in destitute economic conditions and to determine how governments can allocate public benefits to eligible recipients, particularly for means-tested programs. Cash income is a traditional form of income, although accrued or unrealized income can be classified more specifically in the particular contexts of economic transactions and industries.

Sources of income can include earned income (wages, salaries, and self-employment income), property income and gains, cash benefits from the government, and other private cash income; however, the portion of earned income accounts for about 76 percent of total gross income in the United States and about 65 to 70 percent in western European countries where supportive social (welfare) benefit systems have been implemented (O'Higgins, Schmaus, & Stephenson, 1990). Further, market incomes, a broader category that includes earned income, property income, and occupational pensions, is more than 90 percent in the United States, which is higher than in its counterpart nations with comprehensive social benefit systems that usually account for about 70 to 80 percent (O'Higgins et al., 1990). Cash benefits offered by governments vary in the portion of total gross income across nations; it comprises about 8 percent in the United States and about 15 to 30 percent in western European countries (O'Higgins et al., 1990).

On the other hand, defining income has often been the center of debates regarding the validity of traditional poverty measures and consequently leads to attempts to introduce modified methods to determine poverty lines. In short, the relationship between income and public policies and programs (including social insurance and social welfare programs) implies that government programs are an important function in income redistribution. Nevertheless, several studies on economic markets and their associations with public benefit programs, particularly for low-income workers, have shown that relative income inequality has increased in the United States (Gruber, 2012). Gruber (2012) noted that those in the highest 20 percent and highest 5 percent of income levels earn 71.5 percent of total income, while those in the lowest 20 percent and the second-lowest 20 percent groups only earn 10.8 percent of total income. Further, the share of the high income groups has steadily increased for the past 50 years, but the share of the low income groups has decreased during the same period.

Income inequality in the labor market is substantially related to the migration of unskilled workers and wage differentials between skilled workers and unskilled workers (Boeri & van Ours, 2008). This phenomenon is prevalent in the United States because it has historically welcomed immigrants and implemented favorable immigrant policies and social policies for immigrants. The increased supply of unskilled workers through immigration is considerably higher than the number of skilled migrants, and a huge influx of unskilled immigrants eventually decreases the wages of unskilled workers and affects wage and income inequalities between skilled and unskilled workers in the domestic labor market in a country open to immigrants.

2.1 Redistribution Effects and Institutions of Social Protection

Redistribution for economic inequality

To alleviate economic inequality, governments in most countries implement tax benefit programs and transfer programs, including cash and other in-kind benefit transfers. Transfer programs can be managed through government systems (public management system), but tax benefit programs often involve private sector systems through employers. Therefore, transfer programs function as a public benefit system for income redistribution, but tax benefits are usually adopted as a private redistribution mechanism.

Transfer programs are extensively adopted in many countries, but there are variations in the level of government involvement across nations. Hence, the different combinations of these programs contribute to the degree of redistributive impacts on welfare states. Accordingly, a study showed that transfer programs account for about 76 percent of redistributive impacts on average among fourteen developed countries participating in OECD, and tax benefit programs accounted for about 24 percent of total redistribution (Mahler & Jesuist, 2006; Goudswaard & Caminada, 2008). The study also indicated that pensions considerably contribute to the redistributive impact of transfer programs. All fourteen countries depended more on transfer programs for redistribution; however, the differences in program implementations between countries were more noteworthy. Switzerland is the largest supporter of transfer programs, which account for about 98 percent of its redistribution programs (with only 2 percent for tax benefit programs). In the United States, about 60 percent of redistribution is from transfer programs (with 40 percent from tax benefit programs) (Mahler & Jesuist, 2006; Goudswaard & Caminada, 2008).

2.2 Social Protection and Social Expenditures

The previous sections have discussed income inequality along with transfer and tax benefit programs, which are fundamental redistributive mechanisms used to alleviate economic inequalities in an economic context. Social protection also supports income security for individuals, and it tends to include extended concerns about global poverty and economic development in a global context. The largely accepted areas of social protection involve social safety nets, social insurance, and labor market intervention, which are generally implemented as social welfare programs.

On the other hand, a scholarly effort to reframe the definition of social protection tends to expand the scope. A newly framed definition implies a comprehensive meaning in which social protection can promote the capacity of the poor to manage social risks they may face in their ordinary lives (Holzmann & Jørgensen, 2001). Thus, the reframed social protection definition may include prevention beyond mitigation and coping in both public and private settings, including market-based and informal levels (Holzmann & Jørgensen, 2001). In sum, while redistributive programs represent relatively limited means to resolve economic disparities by focusing on earnings, income, and monetary gains from other sources, social protection can be understood as a comprehensive solution that includes redistributive programs.

For this study, income maintenance programs and certain social benefit programs that support work promotion for low-income workers are primarily investigated. It is important to examine social protection from an inclusive perspective beyond income redistribution that generally addresses income inequality. Social protection can be defined as an integrated, long-term perspective notion, including safety nets, income security, labor market (employment) stability, and security with robust elasticity for low-income workers during fluctuations in economic conditions. For this research, the scope is extended beyond income redistribution to include economic security and a general notion of social protection when examining social benefits and labor markets across public and private sectors.

Social expenditures are defined as social spending on provisions for social benefits provided through public and private institutions. The OECD defines social expenditures as:

> the provision by public and private institutions of benefits to, and financial contributions targeted at, households and individuals in order to provide support during circumstances which adversely affect their welfare, provided that the provision of the benefits and financial contributions constitutes neither a direct payment for a particular good or service nor an individual contract or transfer (OECD, 2007, p. 6).

The OECD's description of social expenditures implies that provisions must be provided for social purposes (social benefits), the delivery should be through institutional mechanisms (institutions), and social benefit programs implemented by institutions should include redistribution among individuals or mandatory participation (Goudswaard & Caminada, 2008). In essence, social policies and programs are identified as the collection of institutionalized social protection, and social expenditures support the implementation of social policies and programs through provision, financing, and delivery mechanisms. This dissertation refers to social protection and social policies and programs interchangeably.

2.3 Interplay of Public and Private Social Protection and Expenditures

2.3.1 Social protection and transition from the public to the private sector

Social protection can be provided through public and private domains, and the public and private bifurcation is determined based on which division has the controlling authority for social expenditures (Goudswaard & Caminada, 2008). A scholarly perspective to examine the different divisions of social protection considers public social protection as a traditional study focus on social policy and views private social protection as being mainly associated with labor and industrial relations (Rein & Rainwater, 1986). In other words, scholars who maintain this perspective believe that the public sector is accountable for welfare, while the private sector takes responsibility for employer-based fringe benefits.

Therefore, from the traditional scholarly perspective, the market-based private sector performs the initial distribution through salary and wages to employees, and the public sector assumes the role of redistribution through transfers and services, namely the products of the political process (Rein & Rainwater, 1986); however, it should be noted that the traditional stance of public and private segmentation regarding redistribution and social expenditures has transformed towards requesting more involvement from the private sector.

Regarding policy trends that promote private mechanisms for social protection, two fundamental points should be noted. The first is an efficiency assumption that is generally adopted as a rationale for private social protection. According to the theoretical background, the financing and delivery system of social protection in the private sector contributes to economic efficiency (Pearson & Martin, 2005). Even if it may not be an absolute solution to relieve financial burdens, a private system is still expected to create cost reductions for the public sector by transferring certain portions of the social expenditures to the private sector (Rein & Rainwater, 1986). Moreover, Pearson and Martin (2005) proposed a conservative argument on the efficiency assumption by indicating that simply shifting the costs to the private sector does not considerably decrease the financial burden of social expenditures.

The second argument involves providing more selection choices to social benefit recipients to decrease concerns about the inequality of coverage and the quality of social service programs that are differentiated in the private sector from the public sector. Scholars generally agree on the assumption that private provisions increase inequalities and diminish redistributive effects. Titmuss (1965), who designated three different areas of social benefit provisions (social welfare, fiscal welfare, and occupational welfare), initially expressed concern about inequalities associated with private social provisions, but he did not articulate the importance of occupational welfare offered by employers. Hacker (2002) supported the inequality argument by indicating that the coverage and benefit levels of private social provisions may be distributed more unequally than public provisions.

In contrast, Rein and Rainwater (1986) cited a study that investigated a counter-outcome of the inequality issue on social benefit provisions in the private sector. The study particularly focused on sick pay benefits related to inequalities and the efficiency of cost reduction in Germany (Western Germany), and it was concluded that sick pay provided by the private sector was not significantly different from sick pay provided by the public sector (Immergut, 1986). The contradictory study results challenge the general assumption that private provisions increase the inequality of redistribution, which might be attributed to the focus of the study on sick pay programs in a particular country with different welfare state ideologies than market liberalism and the residual philosophy that the United States maintains.

Moreover, it may be caused by the specific relationship between public benefit systems and industry relations. In Germany in the 1970s, while workers supported changes in the responsible provider for social benefits from the public to the private sector, employers did not want to accept accountability for social benefits (Immergut, 1986). The different responses between employers and employees to the policy change suggested that employees had robust bargaining power in the labor market in Germany at that time. Immergut (1986) indicated that collective bargaining as well as government policy contributed to the benefit expansion in the 1960s, and the employees could obtain additional income coverage for sicknesses through collective negotiation. In sum, the balanced combination of market forces and political effort created a set of government and employer benefits in Germany around 1960s and 1970s. Consequently, workers were likely to perceive no significant difference between sick benefits between the public and private sectors.

2.3.2 Public social spending and private expenditures in the United States

Obtaining financial sources for social protection requires generating expenditures to the benefit providers. In general, public financing for social benefit programs (social protection) refers to social spending from direct government expenditures and tax expenditures in different journals of government accounting. Private expenditures through employers in the industry can be another major source of financing for social protection. For instance, employers can be required to provide pension benefits in a certain form, such as employer-based pensions or individual pension plans, as well as defined benefit plans.

Across nations, the arrangements of public and private expenditures vary. The United States is one of the welfare states that emphasizes the involvement of employers and the role of the private sector rather than the expansion of government social spending (Gilbert, 2010). Private benefit programs play a major role for pensions and healthcare benefits (Super, 2008). Despite some variations in the degree of involvement, the dynamics of public and private expenditures becomes more important in the continuum of welfare state development in the current social and economic conditions and for a more promising future. To extend the viewpoint, when emphasizing private provisions, policy implementation that requires mandatory benefit programs through employers and government support of the private responsibility can be measures for social protection. This tendency has been observed particularly in the United States and continue to occur in the American welfare and social protection systems.

Regarding cost generation, it may be appropriate to note that employer-based private benefits entail cost-sharing with governments for social welfare, indicating a full shift of the financial responsibility from the public to the private sector. As Rein and Rainwater (1986) noted, occupational welfare through the private sector may not create irrational redistribution or an increase in inequalities. Nevertheless, because private social programs through employers are only available to the employed population, the role of the government in controlling the allocation of social provisions would be still necessary. In other words, the employer-based private benefit programs cannot replace the targeted income maintenance programs offered in the public sector. Further, the complementary effect of the private programs may be limited when public spending declines along with the cost-sharing of private employers.

2.4 Redistribution through Work

Social welfare programs have historically involved the issues of *dependency* and *self-sufficiency* in American society. Individualism is an important American ideology. To the American people, while the working poor are usually considered the *deserving poor*, the *undeserving poor* typically refers to able-bodied adults who are unemployed or who receive welfare (Daguerre, 2008). Although Americans tend to adopt a public consensus to help the deserving poor, they have a negative perception of welfare and believe that welfare recipients are the undeserving poor (Bullock, 1995). In the same vein, neoliberal values place individualism at the center and consider welfare states as undesirable regarding individual freedom (Taylor, 2007). Thus, neoliberals advocate individual responsibility and inequality in society and believe that state intervention to reduce inequality is not compatible with their values.

The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, better known as welfare reform, was the political response to the request of American society regarding social welfare policies. The central idea of welfare reform is to promote the *self-sufficiency* of the poor and the values of work and family. The welfare reform reflected Americans' public opinions about welfare and focused on the deserving poor as targeting welfare recipients.

Since the welfare reform, while welfare benefits have been reduced, welfare recipients are also required to participate in the labor market for the eligibility of welfare benefits. Accordingly, the policy trends have transformed to expand work reward programs to supplement the insufficient earnings and to support limited work opportunities (Stoker & Wilson, 2006). This policy trend has been implemented in the form of work-support programs, and from a scholarly standpoint, it has named collectively as work-support system (Sawhill & Haskins, 2002; Stoker & Wilson, 2006).

In short, the work-support policies and programs function as an instrument for redistribution through work in welfare states. Thus, the Earned Income Tax Credit (EITC) and Supplemental Nutrition Assistance Program (SNAP) are also classified as major components of work-support policies and programs.

Chapter 3. Social Safety Nets in the United States Welfare System

3.1 Social Safety Nets in the United States

Social welfare refers to the well-being of society, which requires government involvement in dealing with social problems, primarily poverty issues, when focusing on economic well-being. The government's response to social problems includes social welfare policies (collective political responses) and social welfare programs (the instruments and products of social welfare policies) (Segal, 2007). Therefore, the process of recognizing social problems and finding solutions to provide social (and economic) well-being through social welfare programs establishes a social welfare system. Currently, most economically advanced countries have established welfare systems. Briggs (1961) identified states whose governments are involved in social well-being with the intention to "modify the play of market forces" as welfare states (p. 228), which is the most commonly acknowledged definition (Gilbert & Terrell, 2010).

According to Briggs (1961), welfare states implement welfare systems for three major reasons, including economic security to compensate for lost income, a safety net to guarantee minimum living standards, and essential services (i.e., health and education) for human well-being (Gilbert & Terrell, 2010). For economic security, social insurance policies are the primary approach, and safety nets primarily target the poor and disadvantaged through public assistance or social assistance (i.e., means-tested antipoverty programs including cash relief and social services). Welfare states across countries have common goals to resolve economic and social problems through social welfare systems, including the implementation of social welfare policies and programs. Nevertheless, they have differences and similarities in the process of welfare state development because social welfare policies and programs reflect underlying values in a society and specific social, economic, and political contexts of a welfare state. Three *welfare regimes* (liberal, corporative, and social democratic regimes) in capitalistic society were identified by Esping-Andersen (1990) and are considered a notable scholarly contributions to the comparative study on welfare states. However, it appears that the pattern of welfare state transformation in recent years shows both similarities and variations in the degree of public involvement in social and economic well-being as well as in the expansion of the sources of social spending.

In the American context, individualism and market liberalism form the foundation of the ideological bases of welfare state development. Furthermore, the differentials of the power resources based on classes and racialized politics are also reflected in the structure of the American welfare state and the transformation of the welfare state. In the process of welfare state development, lower-class workers were not able to have strong political support to secure their economic interests (Quadagno, 1987). In the same vein, the limited power of labor unions in the labor control process contributed to the dualism of the American economy—historically an industrialized economy versus agricultural and domestic laborers—which has influenced the American welfare system and the ongoing argument regarding the coverage and the level of social benefits (Quadagno, 1987). After the industrialized and post-industrialized periods, the dualized economy was also reflected by labor market segmentation, segregating the low-income labor market in particular.

Most importantly, since the important turning point of welfare restructuring (welfare reform) under the PRWORA in 1996, the American welfare state has placed more emphasis on market forces, which are the roles of the labor market, business power, and economic systems, in implementing the social welfare system. The government of the United States has reduced their public responsibility for the economically disadvantaged and the administrative system of social welfare policies and programs. The decline of public responsibility is prominent in income maintenance programs in particular. Thus, the changes in the approach to social welfare policies have transferred the responsibility of economic well-being to individuals and their families by promoting labor market participation (Hacker, 2006). The roles of employers are also more important than before for low-income workers and families to sustain a decent quality of life.

On the other hand, scholars who study social (welfare) policy examine the direction of welfare state transformation, recognizing the trends as an *enabling state* (Gilbert, 2002) or *welfare retrenchment* (Pierson, 1994). An enabling state is characterized by privatization and contracting in social welfare delivery and seeks social inclusion through work requirements to be eligible for social assistance (Gilbert, 2002). For modified welfare states, Pierson (1994) investigated the government perspective to identify a causal relationship between the curtailing of social spending and changes in political motivation to support a small volume of welfare expenditures. According to Pierson's argument, politicians basically tend to avoid blame for the "maturation of social programs and adverse demographic trends" under unfavorable, harsh economic conditions (1996, p. 174).

This dissertation study focuses on the social and economic perspectives rather than the political forces in changes in social welfare policies and programs. The transformed welfare state emphasizes work responsibilities of welfare recipients and eventually creates structural changes in the social benefit system from welfare-based benefits to employer-based benefits; however, since welfare reform, existing studies have focused on welfare recipients and the decrease in social spending for public assistance programs. Moreover, previous studies did not investigate the coverage or level of employer-based benefits for low-income workers who considerably depended on welfare benefits before they participated in the labor market and who are now classified as the working poor population.

Because pre-welfare recipients are more likely to be engaged in low-wage work and in the transition stage of seeking stable jobs, they would not be fully supported by government benefit programs or by employer-based benefits to maintain a minimum standard of living and economic security. Weaver (2009) argued that PRWORA does not imply an intention to protect low-income workers or to support social benefit programs for them. In the same vein, Myers and Gornick (2009) broadened the scope of argument, indicating that the current social and employment systems in the United States are not set up to ensure the economic well-being of working families. To pursue this argument further, this chapter discusses the working poor population in more detail.

3.2 The Working Poor Population in the American Welfare System

No officially accepted standard definition of the working poor exists in academic research on labor economics and social policy, but most researchers define the working poor according to workers' income-levels and the percentage of poverty lines based on their incomes. The working poor are usually referred to as currently employed workers with low skills and low incomes who fall below a certain percentage of the official poverty thresholds (Blank, Danziger, & Scheni, 2006; Rupured, 2000). Similarly, Schwartz and Volgy (1992) considered those whose earned incomes range from below 100 percent and up to 200 percent of the official poverty line as the working poor, and Blank et al., (2006) defined those whose family incomes are below 200 percent of the official poverty line as the working poor.

On the other hand, according to the Bureau of Labor Statistics (BLS) in the United States Department of Labor, the working poor are identified as "individuals who spent at least 27 weeks in the labor force during the year with income below 100 percent of the official poverty line" (U.S. Department of Labor, 1999, p. 1); however, these definitions exclude individuals who are unable to find employment regardless of their desire to work (Rupured, 2000). The potential working poor population is also likely to be excluded from both government benefits and employer-based benefit programs. Furthermore, because the working poor usually face economic hardships in maintaining financial stability and economic security, they may be eligible for SNAP, previously called food stamps, childcare support, and other welfare programs (Rupured, 2000).

Since low-income workers are primarily less-skilled workers, excluding high-skilled professionals who work for limited hours, the level of educational attainment is an important factor that influences the economic conditions of the working poor. Also, total work hours, types of employment (i.e., full-time, part-time, and other temporary positions), and work schedule (i.e., standard, nonstandard work) are significant components that should be considered when studying the working poor and the low-wage labor market. Blank et al. (2006) also discussed gender differentials in the low-wage labor market as well as the increasing participation of less-skilled women in the labor market, particularly in the mid-1990s. The gender variable should also be examined along with marital status and family structure.

Research on the working poor and economic well-being should take behavioral changes in social expenditures over business cycles into account. While there is substantial research on economic conditions and variations in social spending including research conducted by McGuire and Merriman (2006), few studies have examined the impact of the recent economic recession on the economic well-being of low-income workers and their families. Thus, this study includes an analysis of the association between public assistance programs and employer-based benefits for low-income workers according to changes in economic conditions.

3.3 Classification of Social Benefit Programs

3.3.1 Scope of social benefits: Historical classification of social welfare systems

A forerunner of social policy discipline in early years, Titmuss (1958) described welfare state policies using three different (but complementary) systems, including social, occupational, and fiscal welfare. Social welfare refers to the provision of goods and services (income support, healthcare, and other social services) provided by direct government expenditures. Occupational welfare refers to another component of the welfare system implemented through employment and the workplace. In the United States, health insurance is the most important benefit currently provided by employers, and other benefits, such as sick leave, parental leaves, tuition support for the children of employees, and housing assistance, are also included in the occupational welfare system (Gilbert & Terrell, 2010). The fiscal welfare system functions as part of an income support mechanism through a tax system that internally posts tax expenditures for tax credits, deductions, and exemptions on government accounting instead of social spending.

Many researchers have noted that occupational and fiscal welfare systems have expanded the scope and involvement in social welfare policy. Titmuss (1958) predicted this phenomenon based on the characteristics of the two welfare systems. The designated occupational benefits considerably depend on government policy because employers expect deductions and/or tax exemptions for employee benefit costs. Likewise, the tax system used for fiscal welfare is a core instrument of social policy (Titmuss, 1958). However, it should be noted that occupational and fiscal welfare may be more favorable for people with middle or high levels of incomes or for those who have considerable assets and property that produce tax benefits for the owners rather than for low-income workers, who are unlikely to possess assets other than earned income.

3.3.2 Scope of social benefits: Reclassification of social benefits

The OECD basically adopts the classification of welfare systems developed by Richard Titmuss and states that the benefits with *social purpose* include: "old-age cash benefits; disability cash benefits; occupational injury and disease; sickness benefits; services for the elderly and disabled; survivors; family cash benefits; family services; active labor market policies (ALMPs); unemployment compensation; housing benefits; public health expenditure; and contingencies (e.g., cash benefits to those on low income)" (Adema, 2001, p. 7). According to Titmuss (1958), social benefits generally refer to cash benefits, social services, and tax expenditures for social purposes, such as tax credits for families and children.

The three different welfare systems can be reclassified based on the subjects that control the financial flows in the process of implementing social welfare policies and programs (Adema, 2001). As described in the System of National Accounts (SNA) (United Nations Statistics Division, 1993), the financial flows for social benefits can be controlled by both public and private institutions. For example, social benefits provided by direct government payments and by using social insurance systems with individual contributions are considered public (social) benefits; on the other hand, social benefits provided through direct payments from employers (e.g., compulsory sickness payments) and pension benefits offered by a private fund mechanism along with contributions from employees (i.e., employment-related pension plans) are regarded as private (social) benefits (Adema, 2001). Therefore, the classification of social benefits is fundamentally related to different sources of social benefits and whether governments are directly involved or not.

There are two different types of private social benefits: mandatory private social benefits and voluntary private social benefits. For the former, *public fiscal intervention* or *government regulation* is involved in the process of social benefit provisions, while these interventions and regulations are not involved in the latter case (Adema, 2001). Within the social benefit systems in the United States, individual pension plans (i.e., the individual retirement accounts) are considered private social benefits, and more specifically, mandatory employer-provided benefits when contribution stipulation is included in the social benefit implementation (Adema, 2001).

In sum, the traditional classification of social welfare systems described by Titmuss is still embedded in the structure of public and private social benefits (benefit programs), and the government's intention to regulate specific social benefit programs (control power of governments) is an important factor in determining public and private boundaries. Expanding the participation of private sectors in social benefit systems suggests the transfer of public responsibility (to some extent) to protect the economic security of citizens to employers in the private industry through regulatory participation in social benefit programs. Consequently, the government can expect a complementary effect of private social benefits for the reduction in public benefit programs.

As previously noted, there is no standardized classification form of social benefits; rather, social benefits can be categorized according to different perspectives that are constructed based on government involvement, controlling power, employee contribution requirements, and so forth. Whether or not the social benefits are direct provisions from the government is another way to classify them. When governments (central or federal, state, and local governments) provide cash transfers or goods and services directly to recipients, the benefits are described as direct social benefits. On the other hand, when using other routes (such as occupational benefit systems through employers and tax benefits through public tax systems, including tax deductions, exemptions, and credits), instead of direct government provision, the benefits are referred to as indirect social benefits. The indirect benefits include regulatory transfers, such as compulsory private social benefits through employers and other types of social benefits using government powers (i.e., rent control) (Gilbert, 2010).

The categories of public versus private social benefits and direct versus indirect forms of provisions are used for this study. For the private benefit category, employer-based social benefits are the focus, which are generally implemented under government control and conditions required by governments. Social benefits offered voluntarily by employers are also discussed to the extent of the available data.

3.3.3 Public and private social benefits: The political influence on the social benefit structure

In analyzing American social policies and social benefit programs, the interconnection of public and private social benefits is notable. The interconnection allows for less social spending from governments on public social benefit programs than other financing sources to support social benefits in American society. Traditionally, the American government has maintained a small welfare state and residual perspective on social welfare policies, spending the minimal level of social expenditures. The underlying philosophy of the American welfare state and social policies, as briefly discussed in the previous section, is rooted in individualism and market capitalism. Therefore, in the capitalistic welfare state, described as "employee societies," American citizens commodify individual labor in the market and engage in free competition for better economic positions and well-being (Wilensky & Lebeaux, 1958). This characteristic demonstrates a relationship between social benefits and the economic market and implies the importance of the economic and labor markets as primary private sectors as well as the role of private sectors in social benefit programs.

Hacker (2002) described the pattern of the American social benefit mechanism as a *divided welfare state*. His central argument was that private social benefits are deeply rooted in the structure of American social policies but that they are controlled by public policies along with subsidies from the public sector (Hacker, 2002). Although Hacker did not clarify the scope of employer-based private social benefits or the comprehensive definition of private social benefits, his argument appears to be based on the assumption that employer-based social benefits are the predominant private support used in the United States rather than other private social benefits, such as informal support from families and voluntary services from nonprofit or for-profit agencies.

Hacker (2002) focused on the political and economic influences on both public and private social benefits. In essence, institutional fragmentation throughout the American political system has ultimately endorsed and promoted the development of social benefit systems in the private sector (Hacker, 2002). Moreover, fragmented institutions are relatively favorable for private social benefits; there are fewer political barriers and constraints for private social benefits than for public social programs with broad coverage (Hacker, 2002). This tendency reflects the characteristics of a privatized social policy, which consists of a complex interrelationship between public policies and private social benefits. Although private sectors are involved in social benefit systems, private social benefits are considered to be attached to public policy in the American economic and political contexts rather than as independently implemented programs (Hacker, 2002). In short, private social benefits tend to be adopted when public social programs face political barriers in the process of establishment, particularly when market failures affect the positive functions of social benefit systems. Hence, it is understandable that private social benefits are financially supported by public policies and are adjusted to meet public goals.

One difference between private social benefits and public social programs is that a private social benefit system is relatively less visible and less traceable; this feature of private social benefits makes it difficult to track government responses to public demands or the results of government actions when private sectors are involved in the process of social benefit provisions (Hacker, 2002). This may eventually increase social inequalities in American society due to the predominant involvement of businesses in the social policy process.

Throughout this dissertation, social benefits have a comprehensive meaning that includes different benefit sources, and the classification of social benefits refers to a schema developed by the OECD. This structure of social benefits aligns with the post-dissertation research trajectory and involves the comparative study across economically advanced nations. In the first stage, this study aims to examine the social benefit system in an American context, including the roles of employer-based social benefit programs and whether the benefit programs function effectively during economic recessions and downturn conditions in particular. This study analyzes a recent data set that includes the household, family, and individual levels.

3.4 Social Assistance Programs in the American Welfare State System

As discussed, the American social welfare system is divided into the clientele of benefit recipients and the sources of financing for the benefit programs. In general, public benefits (i.e., public assistance or social assistance programs) are subject to means-tests. Means-tests refer to economic criteria applied to determine whether individuals or families are unable to purchase goods and services for their basic needs, and they are accompanied by income and asset tests in the United States (Weaver, 2009). Thus, public assistance programs are often interchangeably referred to as means-tested programs. The government in the United States provides different types of cash and in-kinds provisions of means-tested programs, which support the basic needs of food and nutrition, housing, and healthcare.

On the other hand, social insurance programs require a pre-contribution of the beneficiaries, and program participation is mostly administered through payrolls or other tax payments. Therefore, employer-based private social benefits are eventually developed through social insurance systems that protect individuals and families from economic risks due to loss of job, physical injury or disability, retirement, or death of wage-earners in families. This section briefly discusses the major means-tested programs and employer-based social insurance programs in the United States.

3.4.1 Cash transfer (TANF)

Temporary Assistance for Needy Families (TANF) has been a cash assistance program from the federal and state governments since 1997, and it was implemented based on the PRWORA of 1996, also referred to as welfare reform. Welfare reform introduced TANF, and the Aid to Families with Dependent Children (AFDC) program was replaced, which had been the major welfare program in the U.S. from 1936 to 1996. AFDC provided income support for single-parent families, and in some cases, it expanded the benefits to two-parent families when one parent was unemployed (Moffit, 2003; Scholz et al., 2008). On the other hand, TANF aims to promote self-sufficiency through employment and to maintain two-parent families by providing cash benefits, referred to as *welfare*, to needy families (U.S. Department of Health and Human Services [DHHS], 2015). Under the PRWORA, states have the discretion to design and implement TANF programs with block grants from the federal government and also have the authority to reject payments of cash assistance to recipients. TANF applies five-year lifetime limits for cash benefits. It also functions as a means of social control by enforcing the strict requirements of labor market participation (work requirement) for benefit eligibility and by imposing sanctions when welfare recipients do not satisfy the work requirement (Moffit, 2003). Due to the lifetime limits for cash benefits following welfare reform in 1996, participation in the TANF program considerably declined, and the provisions of public assistance benefits increasingly shifted from cash to services (Meyers & Gornick, 2009).

By targeting low-income populations, cash benefits based on means-tests (income-tests) can reduce the financial burden of the government compared with universal programs. Also, cash provisions, unlike in-kind benefits, give recipients the option to select expenditures (Weaver, 2009). In contrast, means-tests often involve complicated and cost-increasing mechanisms for program administration, and the administrative inconvenience and the image of stigmatization may impede the actual benefit receipt of potential recipients who are eligible for the programs (Weaver, 2009). In addition, it is acknowledged that phase-out rules for benefits according to income levels can decrease work motivation.

3.4.2 SNAP (Supplemental Nutrition Assistance Program) and Nutritional programs

Food and nutrition programs (FANPs) have a high participation rate in the United States. FANPs were implemented to ensure the consumption of sufficient nutrition for the economically disadvantaged population and to promote better selections for nutritional consumption through education along with the benefit provisions (Currie, 2003). The major programs for food and nutritional support include: SNAP, previously the Food Stamp Program (FSP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the National School Lunch Program (NSLP). This section focuses on SNAP and briefly discuss the other two programs, particularly regarding their relationships with SNAP.

Supplemental Nutrition Assistance Program (SNAP)

SNAP (previously FSP) was originally proposed as a pilot project by President Kennedy and was enacted by U.S. Congress in 1964. Although it began as a small experimental program, it has grown to one of the largest safety net programs for the economically disadvantaged population in American society. As a national program that follows most of the program regulations established at the federal level, SNAP benefits are fully funded by the federal government, but the administrative costs are equally shared by the federal and state governments (Karger & Stoesz, 2014; Moffit, 2003). Along with the administrative control of the USDA for the implementation of the program, state and local welfare agencies and staff are involved in determining qualified recipients and operating the program using Electronic Benefit Transfer (EBT) cards, which replaced "food stamp" coupons.

SNAP is one of the means-tested programs, but there is a differentiation in the program formulation compared with TANF and cash benefit programs. It is notable that eligibility for SNAP is not restricted by family structure, employment status, or age, but rather by means-tests; therefore, unlike TANF, the nature of SNAP assistance is similar to universal entitlement benefits (Bartfeld, Gundersen, Smeeding, & Ziliak, 2016; Currie, 2003). The allocation of SNAP benefits also varies by state, which is another feature of the SNAP design. According to Currie (2003), while different levels of cash benefits based on state discretion may cause variations in welfare programs, the program design of SNAP controls state variations. Nevertheless, state flexibility in the operation of the SNAP program cannot be overlooked with respect to state variations in applying program benefits. Recently, states have applied additional discretionary rules, which create dissimilarities in eligibility assessments and operational procedures for qualified households with children and potential participants (Bartfeld, 2016). As Bartfeld (2016) noted, this variation in the implementation process of SNAP can also create discrepancies in the operation of other food assistance programs related or similar to SNAP.

The general criteria for qualified SNAP recipients are based on monthly cash income— both household gross income and household net income per month. The only exception is that for the elderly or disabled, the income criteria solely assess net monthly income (Currie, 2003). Gross income includes all types of household cash income including loans, EITC, and other cash assistance from the government. All qualified applicants are required to have a net monthly income that is equal to or below the federal poverty threshold in general, and eligible households without an elderly or disabled member are required to have a gross income that is equal to or less than 130 percent of the official poverty threshold as well (Currie, 2003). The asset tests require that qualified households possess less than 2,000 USD in general and less than 3,000 USD for households with elderly members (Currie, 2003).

States can also apply *broad-based categorical eligibility* as an alternative measure for SNAP eligibility. This approach involves more generous income tests that release liquid asset tests and eventually causes variations of SNAP programs by state (Bartfeld, 2016). Bartfeld (2016) noted that in recent years, *broad-based categorical eligibility* has expanded the income range of eligibility to between 130 percent of the federal poverty threshold and 200 percent of the poverty threshold. The categorical criteria can potentially diminish the requirement of asset tests for SNAP eligibility, which also applies to vehicle eligibility. In sum, SNAP is a national food assistance program that assists not only the poor (positioned below the poverty line) but also the near-poor and working-poor families (near the poverty line).

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

WIC is another food and nutritional assistance program that was implemented in1972 to support pregnant women and their infants and children until age five. WIC eligibility is determined based on categorical criteria and income restrictions between 100 percent and 185 percent of the official poverty threshold. As with many other means-tested programs, the income tests include mostly cash benefits but do not include in-kind benefits, such as SNAP assistance (Currie, 2003). Potential recipients of WIC benefits fall into the categories of pregnancy and children under five years of age, but they may also qualify for the WIC program by *adjunctive eligibility*. In other words, people who receive TANF, SNAP, or Medicaid assistance are eligible for WIC regardless of the income limit of 185 percent.

Unlike SNAP, a near-entitlement program, WIC is implemented within the funds limit allocated by the U.S. Congress, and the scope of foods that can be purchased with WIC benefits is narrow, only allowing nutritious foods (Currie, 2003). WIC assistance focuses on the health of fetuses, infants, young children, and their mothers, and thus it provides nutrition education to improve their health conditions. States can also specify the brands of food eligible for purchase and are given the discretion to schedule the cycle of voucher distribution (Currie, 2003). In short, WIC is a combined benefit program providing food assistance, nutrition education, and access to health services that target infants and pregnant or postpartum women during a fixed period (Currie, 2003).

National School Lunch Program (NSLP) & School Breakfast Program (SBP)

The school breakfast and lunch programs also provide food assistance to economically disadvantaged children through schools that participate in the programs. The NSLP is a subsidy program that provides lunches to children attending schools, theoretically regardless of household income levels (Currie, 2003); however, children can receive either free, reduced, or full-price meals based on eligibility, and the amount of financial support is reimbursed to the schools that participate in NSLP and SBP (Bartfeld, 2016).

Children become eligible for free lunch if their household income is below 130 percent of the official poverty threshold, and they are eligible for reduced-price meals if the household income falls between 130 and 185 percent (Bartfeld, 2016). Categorical eligibility can also be applied for NSLP qualification. That is, if the child or any member in the household participates in TANF or SNAP, the child is also eligible for school lunch programs. The program administration is controlled by the USDA through local agencies in states, and local agencies are involved in the technical assistance for food authorities and participating schools (Currie, 2003). To improve the efficiency of the application process for NSLP and SBP, *direct certification* using a shared categorical eligibility has been supported and expanded so that an additional application process is not necessary for the receipt of NSLP and SBP (Bartfeld, 2016; Hanson & Oliveira, 2012).

Similar to SNAP, the food assistance program through schools can include differences in program operation based on regions, particularly for SBP because schools tend to have participation flexibility in SBP rather than in NSLP (Bartfeld, 2016). On the other hand, as Bartfeld (2016) indicated, there is a tendency for school districts with very poor neighborhoods to use the school meal provisions to create an infrastructure of school meal plans that provide free meals for all students.

3.4.3 EITC (Earned Income Tax Credit)

The Earned Income Tax Credit (EITC) is a refundable tax credit initiated under the Tax Reduction Act of 1975 as a wage subsidy for low-income (and moderate-income) workers with dependent children, and it was established as a permanent provision of the American tax system and part of federal anti-poverty programs in 1978 (Ajilore, 2008; Axinn, 2005; Karger & Stoesz, 2014; Segal, 2007). The purpose of the EITC is to compensate for the Social Security taxes of low-income workers with children and to provide rewards for work (Ajilore, 2008). Unlike AFDC, the EITC provides tax benefits to single parents as well as married couples.

The EITC program supports low-income individuals and working families with dependent children in rising above the poverty level (Segal, 2007). Like other means-tested transfer programs, the qualifications for claiming the tax credit are determined based on the level of income; however, the amount of the tax credit is measured based on the level of earned income, and the provisions of cash benefits are transferred through the existing tax system rather than through the welfare system, which controls other means-tested assistance programs. By utilizing the tax system, the EITC eliminates the stigma attached to public assistance programs. The EITC has significantly contributed to promoting the labor market participation of low-income workers (Ajilore, 2008).

In 1993, as part of a budget bill (Omnibus Budget Reconciliation Act), the amount of the tax credit and the eligibility for the program were expanded, designating the EITC program as a central antipoverty program in the United States (Axinn, 2005; Hotz & Scholz, 2003). Thus, since 1993, those who have earned income but do not have dependent children also qualify for the EITC benefit. On the other hand, in 1996, PRWORA could have contributed to the increase in the use of EITC by generating a synergy effect on the labor market along with the expansion of the EITC program itself (Stoker & Wilson, 2006).

EITC is currently the largest cash assistance program in the United States, and the federal EITC program will continue to offer the benefit for five years based on the American Taxpayer Relief Act of 2013 (Congressional Budget Office [CBO], 2013; Hathaway, 2016). Twenty-six states and the District of Columbia implemented state EITC programs as of 2016, most of which determine cash benefits based on federal credit, though there are variations in the proportions of the credit, the eligibility criteria requiring dependent children, and the limitations of the refunds related to tax liability (Hathaway, 2016). In short, the federal EITC program has been considerably expanded and has had a significant effect on encouraging labor market participation for low-income workers.

EITC and TANF

EITC and TANF are both cash assistance programs determined by income-tests, which provide the advantages of program implementation with regard to overall operation costs and the nature of cash benefit. The costs to maintain the programs are lower than universal programs because a specific group, or low-income workers, is targeted for the beneficiaries, and the cash provisions allow recipients to select expenditures based on their needs (Weaver, 2009). Nevertheless, there is a significant difference between EITC and TANF in the implementations of the programs. TANF frequently leads to labelling qualified beneficiaries as *welfare recipients* by processing cash transfers through the welfare system, and the EITC removes the negative stigma effect by processing the benefits through the tax system for tax-filing wage earners.

As income increases, cash benefits from the EITC and TANF are designed to phase out, which may affect the work motivation of low-income participants (Weaver, 2009). It is clear that the federal EITC program has been the most favorable program for low-income individuals and families, while participation in the TANF program has decreased since the welfare reform of 1996

(Stoker & Wilson, 2006). This trend can be attributed to the constraint of the TANF funds and the restrictions on the qualification for cash assistance.

EITC and SNAP

In the United States, the EITC program and SNAP are recognized as the most consistent and largest public assistance programs to supporting the labor market participation of low-income workers in particular (Mikelson & Lerman, 2004; Stoker & Wilson, 2006). As discussed, both federal programs are accessible in all states without conditions regarding qualified dependent children for eligible recipients, although there are some variations in the levels of benefits depending on the sizes of households and the number of qualified children. These assistance programs are managed both within and outside the welfare system and reflect changes in living expenses since the inception of the programs.

It has been noted that cash benefit recipients of the EITC program are more likely to decrease SNAP participation to some extent, even if other considerations are involved. For instance, workers claiming the EITC in the mid- to late-1990s were inclined to not participate in the FSP (renamed SNAP) (Mikelson & Lerman, 2004). This negative relationship between EITC and SNAP can be attributed to the macroeconomic conditions that affect employment security for low-income workers and to the differences in the characteristics of public assistance programs. While the benefits of TANF and SNAP decline as the earnings of the program participants grow, the amount of EITC increases until the phase-out stage of the benefit as the earned income rises (Stoker & Wilson, 2006). Based on this tendency, the EITC program provides more benefits to individuals and families with relatively high incomes than for those who fall below or near poverty lines among the economically disadvantaged population.

3.4.4 Medicaid

The Medicaid program provides healthcare and services to low-income individuals and families and has been recorded as one of the largest public assistance programs in the United States. This means-tested health assistance program is managed by the federal government by matching funds of states, and the payments for health services usually transfer directly to the providers of health services (Segal, 2007). Therefore, Medicaid is referred to as an in-kind benefit program rather than a direct cash-transfer program.

Following federal guidelines, each state can design its own program and establish rules for eligibility, types and durations of health services, and coverage rates; this discretion leads to variations in the way programs are implemented among states (Segal, 2007). Regarding the eligibility of Medicaid benefits, the requirement for federally matched funds could contribute to increasing Medicaid participants. States that provide Medicaid coverage for most welfare recipients (participants in federal income maintenance programs) and for related persons who are not recipients of cash benefits are eligible for federally matched funds (Karger & Stoesz, 2014).

Medicaid assistance is provided for the low-income population, including those who have children and who do not have children in the household, though households with children have a higher participation rate than those without children (Stoker & Wilson, 2006). Therefore, it is understandable that Medicaid is the most cost-demanding public assistance program, particularly for single mothers and their children because single mothers are more likely to fall below the poverty line. Other major Medicaid participants include the low-income elderly who incur additional medical expenditures not covered by the Medicare program, the low-income disabled, and the elderly who require long-term care in nursing homes (Gruber, 2003).

Chapter 4. Dualization in the Labor Market and Social Protection: Research Design

4.1. Dualization in the Labor Market and Social Protection

Theoretical concepts and framework

Although this study was not a theory-based investigation, the structural foundation and the concepts of the study are rooted in the notion of *dualization* in the labor market and the welfare system in the United States. *Dualism* exists in various aspects of society, and the interrelation between the social and economic systems leads to the identification of insiders and outsiders. The segmentation of the public and private sectors regarding employment and social benefit providers involves the designation of insiders and outsiders. A dualized society has developed, particularly during the post-industrial periods (Hausermann & Scgwander, 2012). Based on the history of economic development, a post-industrial economy is characterized by deindustrialization, or a declining manufacturing industry and expanding service sectors, globalization, and increasing investments in information technology.

In a recent study that investigated inequality and its negative influence leading to a divided society, Emmenegger, Hausermann, Palier, and Seeleib-Kaiser (2012) indicated that “dualization implies that policies increasingly differentiate rights, entitlements, and services provided to different categories of recipients” (p. 10). They described dualization as a process that explains how differences in the treatment of insiders and outsiders, who are categorized based on various aspects of society, create new institutional dualisms or intensify existing institutional dualisms (Emmenegger et al., 2012). This conceptual framework focuses on social protection and the labor market as central institutional dualisms produced throughout the process of dualization (Emmenegger et al., 2012). In essence, Emmenegger et al. (2012) identified the impact of politics that regulate the labor market and social protection.

Within the context of the dualization framework, insiders and outsiders are generally defined in relation to the labor market, and “outsiders” refer to those who have a high probability of unemployment and atypical employment (Hausermann & Schwander, 2012). More specifically, in the context of liberal countries, including the United States, low-skilled workers are primarily considered outsiders (Hausermann & Schwander, 2012).

When examining labor market divides, segmented labor market theories are often discussed. The segmentation approach to the labor market argues that the labor market is not an integrated entity; rather, it is fragmented into subsectors depending on the level of individual skills and work experience (Pigou, 1945). The segmentation theory is applied to examine the problems encountered in the labor market with a dynamic perspective of the pertinent factors. In essence, the segmentation theory argues that many different segments exist in the labor market but that they do not compete with one another because each segment has different rules and policies to determine employment and wage levels (Dickens & Lang, 1992; Leontaridi, 1998). In other words, a segmented labor market refers to occupational strata in terms of employment opportunities and conditions, and the segmentation theory assumes that labor market segmentation eventually constructs social divides. Hence, the characteristics of labor market segmentation are more likely to appear in advanced industrial countries, especially in the post-industrialization ages (Tomlinson & Walker, 2012).

While the segmented labor market is a relatively comprehensive notion that applies to firms, industries, and/or jobs of internal and external labor markets (Tomlinson & Walker, 2012), the dual labor market theory (Doeringer & Piore, 1971) narrows the scope of segments and divides them into primary and secondary markets. The primary labor market consists of professional jobs with high-skill requirements, and the secondary labor market is a lower-tiered sector generally consisting of low-wage workers.

In the process of dualization, another institutional dualism is related to social protection, which refers to *institutional welfare dualism* incorporated in welfare systems (Emmenegger et al., 2012). Institutional welfare dualism includes social protection from both public and private sources. In addition, employer-provided social policy provisions and occupational welfare provided through a market mechanism are important components of institutional welfare dualism (Seeleib-Kaiser et al., 2012). In essence, institutional welfare dualism is implemented in dual welfare systems that create disparities in social protection for insiders and outsiders.

Social protection insiders usually refer to individuals who can receive benefits either through public/statutory social protection or who receive benefits from private/occupational social protection to supplement their public/statutory entitlements (Seeleib-Kaiser et al., 2012). Institutionalized welfare systems may also be related to welfare pluralism in that they explore different sources of social protection provided by governments and employers through market mechanisms. Dual welfare systems can also differentiate between the means and coverage of social protection between the employed and the unemployed as well as between the working poor and the complete insiders in the labor market.

In short, structural pressures that began in the post-industrial period, such as deindustrialization and globalization, have led to changes in the economy and society through the dualization process. In the process of dualization, politics play a crucial role in regulating social protection and the labor market, consequently leading to institutional dualism. Institutional dualism implies policy changes in the labor market and social welfare system, and structurally divided economic and social systems eventually cause social divides.

For this dissertation research, dualization in the labor market and in social protection is applied as the conceptual and theoretical framework. Within the dualization framework, low-income workers or the working poor comprises the main study population. This study focuses on the dynamics of labor market components and individual characteristics associated with employment sectors and examines the impacts on the public benefit use among low-income populations using U.S. Census data.

Study Questions

Based on the structural foundation and concepts of dualization, the following study questions are examined in this study:

1) Individual, labor market, economic and political factors

Which factors are primarily associated with public benefit use by low-income workers? Which categories of the factors (individual characteristics, labor market components, household and family-related factors, economic and political climate by state) are primarily related to participation in public benefit programs for low-income workers?

2) Employment sector

To what extent are the employment sectors (public vs. private) associated with public benefit use by low-income workers?

3) Employer-based private benefits

How do employer-based private social benefits influence public benefit use among low-income workers, particularly for health insurance and retirement (pension) plans?

4) Economic recession and public benefit use

How did the recent economic recession affect the public benefit use among low-income workers? To what extent did their public benefit use change during the economic recession and after the economic recession?

5) Variations of public benefit use at household and state levels (Random effect)

After controlling for all the fixed effects, to what extent can the variations in the public benefit use by low-income workers be attributed to the variations between individuals in the same household, between households in the same state, and between states?

Significance of the Study

As noted in the literature review section, the welfare reform in the 1990s was carried out to restructure the former American welfare system that was based on Aid to Families with Dependent Children (AFDC) as a central welfare program. However, the new welfare system was not designed to address the economic hardships of low-income workers, even though many welfare recipients of the AFDC system have been driven into the low-income labor market, which mostly consists of less-skilled workers. Although many previous welfare recipients were integrated into the labor market over the past few decades, it does not mean that their economic status is favorable or significantly above the poverty thresholds.

During the recent economic recession that occurred in 2008, the United States and other advanced countries managed economic problems using different degrees of public involvement and different policy responses to the market downturn regarding the working poor, one of the most vulnerable populations. Along with welfare state development, social science researchers have also conducted studies on the relationship between social safety nets and labor markets in general as well as for specific populations. Yet, relatively few recent studies have investigated the impact of labor market segmentation in terms of low-income workers and the relationship with the welfare system and social safety net. By investigating the slowing economic growth of advanced countries and the recent economic recession, this dissertation research aims to examine the associations between economic conditions, individual characteristics, employment sectors, and public benefit use among the working poor.

Throughout this study, dualism and segmentation are the central theoretical concepts applied to identify the relationship between labor market and social protection for low-income workers. During the process of American welfare state development, the structure of social safety net programs became segmented, and the discrepancies in the development of social insurance and social assistance policies and programs have systematically excluded the working poor (low-income workers) from the safety net.

In essence, the dualism and segmentation embedded in social policy and social benefit systems are still acknowledged as primary causes of economic inequality and social divides. This argument also aligns with the redistributive perspective, which indicates that private benefit programs are usually regarded as less redistributive than public programs. This is because higher wage earners are more likely to access private social benefits, and private social benefit programs are considered to be a cause of income inequality (Caminada & Goudswaard, 2010).

Table 4.1. Weighted Descriptive Statistics of Sample Characteristics

% or Mean (SE)

	2008	2009	2010	2011	2012	2008 - 2012
Dependent Variable (Outcome)						
Public benefit use	23.7	24.2	26.2	26.6	26.9	25.6
Independent Variables (Predictors)						
Demographic variables						
age 18 to 24	17.8	16.8	16.1	15.6	14.6	16.5
age 25 to 34	26.8	27	26.9	27	27.3	27
age 35 to 44	25.9	24.9	25.2	25.3	24.2	25.3
age 45 to 54	19.4	20.6	21.2	20.8	21.2	20.5
age 55 to 64	10.3	10.7	10.6	11.3	12.7	10.7
female	48.2	47.9	47.5	47.5	47.4	47.8
white	75.3	76	75.6	76.7	73.9	76
black	17.5	16.4	16.9	15.9	17.5	16.6
asian	3.5	3.7	3.4	3.5	4.1	3.5
race other	3.7	3.9	4.1	3.9	4.5	3.9
hispanic	26	26	26.9	26.9	28.1	26.5
no highschool grad	21.5	20	18.5	16.8	16.3	19.1
citizen US	82.8	83	84.4	83.4	84	83.2
immigrant	26	25.5	25.5	24.8	25.4	25.4
married	46	46	46.1	45.3	45.7	45.9
divorced	13.1	13.2	13.5	13.5	13.1	13.3
never married	35.4	35	34.9	35.5	35	35.2
separated & others	5.5	5.8	5.5	5.7	6.2	5.6
Family & Household variables						
married couple	48.5	49	49.7	49	50	49
male head of hh	8.5	7.4	7.3	6.8	6.5	7.3
female head of hh	23.5	23	22.4	23.6	22.9	23.1
other types of hh	20.6	20.6	20.6	20.6	20.5	20.6
dependent child	55.9	56.9	58.3	57.8	57.3	57.3
metro	80.8	78.8	79.3	79.9	80.2	80

Table 4.1. Weighted Descriptive Statistics of Sample Characteristics (continued)

	2008	2009	2010	2011	2012	2008 - 2012
poverty up to 100	34.1	34.7	32.1	33.1	33.7	33.5
poverty 100 to 150	29.3	29.4	30.8	31	31.1	30.1
poverty 150 to 200	36.6	35.9	37.1	35.9	35.2	36.4
Labor market covariates						
private employment	88.5	88.7	87.9	89	89	88.5
part time work	46	45.7	43.2	42	41.9	44.2
union member	7	6.4	5.8	5.6	5.9	6.2
employee less than 25	45.4	47.2	46	46.2	45.2	46.2
employee 25 to 99	22.4	22.8	21.7	22.2	31.1	22.3
employee over 100	32.2	30	32.3	31.6	23.7	31.5
log person earned income	6.18 (0.027)	6.02 (0.034)	6.11 (0.031)	6.22 (0.033)	6.16 (0.422)	6.13 (0.020)
work limit	7	7.2	7.2	7	7.2	7.1
unemployment rate	5.83 (0.015)	9.37 (0.029)	9.80 (0.030)	9.08 (0.029)	8.12 (0.027)	8.55 (0.022)
Year						
2008						18.9
2009						19.5
2010						19.9
2011						20.7
2012						21
Private benefit through employers						
health insurance - employers	37.7	37.6	36.5	37.4	37.9	37.3
retirement plans		17		18.4		17.7
State political affiliation						
democratic	51.2	49.1		41.9	42	46.9
N	10089	8658	8111	7712	7315	41885

Notes: Log personal earned income includes zero earned income. A predictor - retirement/pension plans is available in the data for 2009 and 2011.

4.2. Data and Research Design

Data Description: SIPP

This study uses the Survey Income and Program Participation (SIPP) for Panel 2008, conducted by the U.S. Census Bureau. SIPP covers information on subjects including different types of income sources, employment and labor market activities, government transfer and other social benefit programs, and other information related to these survey questions by person, family, and household levels, including demographic information. Panel 2008 survey has been conducted from September 2008 through December 2013 with four-month intervals for interviews and four rotation groups that are random subsamples of approximately equal size. The SIPP sampling is based on multi-staged stratified cluster design by combining sampling methods, but it also reflects part of random sampling given the complex design. To manage nonresponse, SIPP uses imputation or weighting (U.S. Census, n.d.).

The SIPP data are composed of core modules and topical modules. Core modules are created for each wave until the last month of the survey, while topical modules cover only specific topic(s) for certain wave(s) for more detailed information. The respondents of the SIPP are required to be at least 15 years of age or older to answer questions regarding themselves or on behalf of other household members.

Throughout the SIPP panel, the respondents are interviewed once every four months, and the interview periods are the panel waves. Thus, the data collecting process can cause *seam-bias* by collecting data for the prior three months during the same interview (Grogger, 2002). The SIPP data are organized with person-month observations, which involves repeated cross sections in the data.

The interviews have been conducted by computer-assisted interviewing (CAI) method since 1996. The CAI instrument supports programs to exclude inapplicable questions to each interviewee by reflecting responses to core questions in the prior wave. These features of the CAI method support consistency and accuracy of the data.
In addition to the SIPP data, this study refers to the data source of the Bureau of Labor Statistics for the data on state annual unemployment rates and to the National Governors Association for the information of the state governor's political affiliation.

Research Design

This dissertation research is designed to conduct an empirical study using cross-sectional analysis and multilevel modeling in order to examine the public benefit use by low-income workers and the association between public benefit use and individual and household characteristics, employment and labor market components, as well as macroeconomic and political factors. The SIPP 2008 data oversampled the low-income population compared with the SIPP panel data collected in previous years (U.S. Census, n.d.). Therefore, substantial analyses of public benefit programs for low-income workers could be conducted by utilizing the SIPP 2008 data.

This study uses year 2008 through 2012 interviews, focusing on the collecting months from September through December each year and the fourth reference month only. By selecting only the fourth reference month for the analyses, as has been done by many other researchers, the seam-bias can be reduced. Also, this approach focusing only on the fourth reference month can reduce the number of repeated person observations for the analyses.

Study Population

The study population for this research covers only low-income workers of working age from 18 until 64 years old. Individuals in this age range, who have work a history at least at one time period (at least one week) during the reference months (interview months) were considered as employed in this study. Also, among the employed individuals, those whose household income-to-poverty ratio is equal or less than 200 percent were focused on for this study

Cross-Sectional Analysis

The research questions have been examined through cross-sectional analyses and multilevel mixed modeling. This study primarily uses the core data, but the core data also have been merged with topical data for two particular waves, year 2009 and 2011. The topical data were collected to explore specific topics in detail, but only one time point of the year and at the fourth reference month only in particular wave. Therefore, a cross-sectional approach is appropriate.

The SIPP data began to conduct interviews in September 2008, and the year 2008 is meaningful for this study because the economic recession occurred that year in the United States. The recession influences public benefit use among low-income workers in 2008 and afterwards at least until the economic conditions recovered. To include this time period of data collection, this study analyzes data, from year 2008 to 2012 respectively, as well as pooled data combining the five years. The data were collected in September throughout December each year, and this study uses only the fourth reference month.

Multilevel Modeling

Along with cross-sectional logistic regression with survey weights, this study also utilizes multilevel (hierarchical linear) modeling. Multilevel modeling accommodates nesting of individuals in households and household in state to examine the research questions for this study.

Multilevel analysis distinguishes sources of variability reflecting individual factors and the social context treats some coefficients in the model as present fixed and others as random (Snijders & Bosker, 2012). Importantly, multilevel modeling includes explanatory variables at lower and upper levels and assigns unexplained variability to the different levels, which reflects the nested nature of the observations that cannot be considered independent at the lower level (Rabe-Hesketh & Skrondal, 2012). Thus, the standard errors given by multilevel analysis take the clustered nature of the data into account. This study employs mixed-effect logistic regression to estimate the fixed effects of covariates and the variances of random intercepts. For this study, individuals are the primary unit of analysis, and household and state represent levels 2 and 3 of the multilevel analysis.

Weights of Survey sample

The SIPP data are designed by a stratified multistage probability sample (US Census, n.d.). By focusing on low-income workers for the main study population, the potential sampling bias caused by oversampling low-income population can be reduced. Nevertheless, this study considers the complex design of the survey data and applies weights for the cross-sectional analysis, while it does not include weights for the multilevel mixed modeling on account of the limitation to implement weighting in multilevel modeling. To adjust standard errors correctly, clustering and stratification of the survey data are also considered for the analysis.

4.3. Variables and Measurement

Most of the variables for this study are selected from the SIPP data and a few variables are merged from other sources. The variables from SIPP were constructed based on the survey questionnaire, and this section covers the main survey question(s) for the selected variables and provides descriptions of the variables respectively.
For the description of the dependent and independent variables, this study refers to the survey questionnaire and technical documents written by the U. S. Census.

Dependent Variable (Response Variable)

Public benefit use	Yes = 1 No = 0
	The dependent variable is a combined variable including major public benefit programs that play roles to support low-income workers to be engaged in the labor market. It is measured by participating in at least one of the following public benefit programs: TANF, SNAP, public child support program, Medicaid, housing program.

Independent Variables (Predictors)

Demographic Variables

Age	Age as last birthday (Edited and imputed age as of last birthday.) Categories: 18 to 24, 25 to 34, 35 to 44, 45 to 54, and 55 to 64 Reference group: 18 to 24 age group
Female	Reference group: Males

Race/Ethnicity	White, Black, Asian, Other races What race(s) does ... consider herself/himself to be? Reference group: Whites
Hispanic	Origin of ethnicity from Spanish, Hispanic or Latino Is ... Spanish, Hispanic or Latino? Reference group: Non-Hispanic ethnicity
No high school grad	Less than high school graduate for the highest education attainment Reference group: Earned degree higher level than high school
U.S. Citizenship	US Citizenship status of respondent Is ... a citizen of the United States? Reference group: Non-US citizen
Immigrant	Is ... born in the United States? Reference group: Born in the U. S.
Marital Status	Categories: Married, Divorced, Never married, Separated (and others) Reference group: Married group

Family and Household Variables

Household type	Married couple – Male head of household – Female head of household – Other types of household[1] Reference group: Married couple households
Dependent child	Reference group: No dependent child
Metro	Live in the metro area Reference group: Live in the non-metro area

Household income-to-poverty ratio (%)

Up to 100 percent, 100 to 150 percent, 150 to 200 percent
Computed by:
Total household income divided by poverty threshold for this household
Reference group: 100 to 150 percent

[1] Other types of household include nonfamily and group types.

Labor Market Covariates

Private employment	Worker classification by employment sector Employment sector of workers whose age is equal or over 15 at the end of the reference period and who had a job during the reference period and were not contingent workers Reference group: Public employment
Part-time work	Work less than 35 hours a week Reference group: Full-time work
Union membership	Hold union membership during the reference period Reference group: Non-union member
Firm size	Number of employees in the local area (employee location) Under 25, 25 to 99, 100 or more Reference group: under 25 employees
Log-earned income	Log transformed total earned income in dollars at the person level[2]
Work limitation	The respondents are prevented from work participation due to disability. Reference group: No work limitation

Private benefit through employers

Health insurance from Employer or Union

The respondents have health insurance provided by employers or union
Reference group: All others including other sources of health insurance and the uninsured

Pension and Retirement plans

The respondents have retirement plans offered by employers.
Reference group: Not covered by the pension or retirement plans from employers

State Variables

State	State code where the respondents dwell

[2] Earned income refers to total person earned income during the reference month. Log-earned income variable includes zero amount of the total earned income at person level.

Unemployment rate by state	
	Average unemployment rates by year in percent[3]
Democratic Party	Political affiliation of State governors[4] Reference group: Republican Party

[3] It was calculated by state and by year (2008 - 2012) using the BLS data source.
[4] This variable indicates political power that influences the implementation of public benefit programs in each state. Although most of the public assistance programs covered for this study are federal programs, but each state has discretion in implementing programs.

Chapter 5. Public Benefit Use by Low-Income Workers: Analyses and Results

This chapter discusses the results from the statistical analyses, including weighted logistic regressions for each year and for the full data (covering year 2008 through 2012) and multilevel models with household and state levels.

Model: Logistic Regression

$$\text{logit}\ \{\Pr(y_i = 1 \mid x_i)\} = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} \ \ldots\ldots\ldots\ldots\ldots + \beta_n X_{ni}$$

X: covariates (independent variables as predictors for outcome)
n: number of covariates *i*

The logistic regression model is constructed to examine how the individual characteristics, family and household related factors, and labor market components are associated with public benefit use among low-income workers. By classifying covariates into three major groups, this analysis intends to examine the influence of each predictor group. Also, the investigation for these associations was conducted for each year from 2008 to 2012, in order to compare features of the relationship according to economic conditions, particularly reflecting the recent economic recession in the United States from the end of 2008 until 2009. Interpretation of the analysis focuses on the full model which includes all the predictors and covariates in the model. The coefficient estimates with standard errors and Odds Ratios (OR) for each variable are provided in the Appendix.

In the interpretation below, it is assumed that all other predictors are controlled, or held constant although this may not be stated explicitly.

5.1 Individual, Family and Household Characteristics

The analysis in this section focuses on the individual characteristics, and family and household-related factors to examine how these factors are associated with public benefit use by low-income workers (Research Question 1). This section discusses the results for the final models including all the variables for the years from 2008 to 2012, which are provided in the Appendix (Table B.1 to Table B.5).

Year 2008

According to the data in the year 2008, low-income workers in the age groups of 45 to 54 and 55 to 64 are less likely to participate in the public benefit programs than those in the age group of 18 to 24. For age group of 45 to 54, the odds of using public benefits is about 28.3 percent lower (*p*

< 0.05) than the odds for the age group of 18 to 24 (reference group), controlling for the other covariates. Similarly, the odds of using public benefits for the age group of 55 to 64 are about 44.8 percent lower ($p < 0.01$) than for the reference group, holding other predictors constant.

Regarding the racial groups, the African American, the Asian, and the other race groups are more likely to use public benefits than the White American (reference group) low-income workers. The odds of participating in public benefit programs is about 87.9 percent greater ($p < 0.001$) for African Americans than for Whites; for Asians the odds is about 52.9 percent greater ($p < 0.05$), and for the other race groups about 43.6 percent greater ($p < 0.05$) than for Whites, controlling for the other predictors. Above all, the odds of using public benefits is about 2.3 times ($p < 0.001$) as great for females as for males (reference group). Similarly, the odds of using public benefit is about 2.6 times as large ($p < 0.001$) for households with a female head of household as for married couple households. In particular, households (family-type) with dependent children are expected to have as much as about 2.9 times the odds of public benefit use ($p < 0.001$) as households without dependent children (reference group).

Individual marital status is also associated with public benefit use. The divorced group and the separated/other group are more likely to use public benefits than the married (reference group). For the divorced group, the odds of using public benefits is about 87 percent greater ($p < 0.001$), and for the separated/other groups they are about 130 percent greater ($p < 0.001$) than for the married group, controlling for other predictors.

In the year 2008, the odds of using public benefits is about 36.4 percent greater ($p < 0.01$) for households, whose income-to-poverty ratio is below or equal to 100 percent, than for households slightly above poverty thresholds, whose income-to-poverty ratio is between 100 percent and 150 percent (reference group), holding other predictors constant. By contrast, for the households, whose income-to-poverty ratio is between 150 percent and 200 percent, the odds of using public benefits is about 25.7 percent lower ($p < 0.01$) than for the reference household, controlling for other predictors. (Table B.1 provides the results for the year 2008.)

Year 2009

For the year 2009, the two final models describe similar estimates on the predictors. One is the model including all the predictors that were covered in the full model for the year 2008; the other is the model with an additional predictor of pension and retirement plan, which is the only difference between the two models. Similar to the year 2008 results, in the year 2009, the age groups of 45 to 54 and 55 to 64 are relatively less likely to use public benefits than the age group of 18 to 24. The odds of using public benefits for the age of 45 to 54 group is about 28.6 percent lower ($p < 0.05$) than for the age group of 18 to 24; for the age group of 55 to 64, the odds is about 51.4 percent lower ($p < 0.001$) than for the reference age group, holding other predictors constant. According to the year 2009 results, controlling for other predictors, male households are more likely to use public benefits. The odds of using public benefits is about 56 percent greater ($p < 0.01$) than for married couple households, which was not found in the year 2008 results. (Table B.2 provides the results for the year 2009.)

Year 2010 and Year 2011

The year 2010 data represent similar results to the previous results for the years 2008 and 2009 regarding the association with public benefit use among the low-income workers, and the following points could be addressed. The age group of 25 to 34 are more likely to use public benefits than the reference group with age 18 to 24. The odds of using public benefits for the age group of 25 to 34 is about 64.5 percent greater ($p < 0.001$) than for the reference group, controlling other covariates. On the other hand, females and minorities (African Americans, Asians, and other race groups) are more likely to use public benefits than males and White workers; however, there was no statistically significant evidence to support that low-income workers with educational attainment less than high school graduate are more likely to use public benefits than those who have higher educational attainment than the high school graduate.

As for the year 2010, the results of the year 2011 show a significantly greater public benefit use among the younger adult age groups. For the age group of 25 to 34, the odds of using public benefit use is about 74.8 percent greater ($p < 0.001$) than for the age group of 18 to 24, controlling other covariates. The other individual characteristics, family and household related factors have similar estimated odds ratios as 2010. (Table B.3 and Table B.4 provide the results for the years 2010 and 2011.)

Year 2012

Unlike results from the other years, the results for year 2012 do not provide statistically significant evidence for an association between age group and public benefit use. The results for gender, race group, and the marital status are similar to the results for other years. Females are more likely to use public benefits than males, and the minority race groups — African Americans and Asians are also more likely to participate in public benefit programs than Whites.

However, there is no statistically significant evidence to support that households with a male head of household are more likely to use public benefits than the married couple households, controlling for other covariates. (Table B.5 provides the results for the year 2012.)

5.2 Employment Sector and Labor Market, Employer-Based Benefits, and Political Factors

The analysis of this section discusses the association between labor market components and participation in public benefit programs (part of Research Question 1). Also, it analyzes whether employment sector and the benefits provided by employers influence public benefit use among low-income workers, and how the association can be predicted (Research Question 2 and 3).

Year 2008

It was assumed that those engaged in the private employment sector may have difference in using public benefits than those in the public employment sector, when this dissertation research proposed study questions. The result of the year 2008 show that the estimated odds of using public benefits is about 15.9 percent lower in the private sector than in the public sector (reference group), controlling for other covariates, but this result is not statistically significant.

Among the predictors related to the labor market, part-time workers and workers with work limitation due to disability are more likely to use public benefits. The odds of using public benefits is about 26.6 percent greater ($p < 0.001$) for the part-time workers than for full-time workers. Similarly, the odds of using public benefits is about 3.4 times ($p < 0.001$) as large for workers with work limitation due to disability as for workers without disability, holding other predictors constant. The results from the year 2008 do not provide statistically significant evidence that firm size and union membership are associated with public benefit use by the low-income workers. However, low-income workers who have health-insurance coverage provided by their employers are less likely to use public benefits; the odds of using public benefits for them is about 72 percent lower ($p < 0.001$) than for those without employer-based health insurance coverage, controlling for other covariates.

Regarding the political affiliation of the state governor, low-income workers living in the states whose governors are affiliated with the Democratic party are more likely to use public benefits than those affiliated with the Republican party; the odds of using public benefits for them is about 29.2 percent greater ($p < 0.001$) than for those living in states whose governors are affiliated with the Republican party. The regression coefficients and odds ratio estimates for the relevant predictors are provided in the Table B.1.

Year 2009 and Year 2011

This section discusses the results for 2009 and 2011 because these two years include pension and retirement plans in the models, which is another major benefit provided by employers.

Most of the labor market related covariates show similar results for 2009 and 2011as for year 2008. Based on the results of year 2009 data, low-income workers engaged in the firms with more than 100 employees, however, are more likely to use public benefits. According to the results for 2009, the odds of using public benefits for the workers employed in firms with 100 or more employees are about 28.5 percent greater ($p < 0.01$) than the odds for those employed in firms having 25 or fewer employees, controlling for other covariates.

For employer-based private benefits, workers who have employer-provided health insurance coverage are less likely to use public benefits; the odds of using public benefits for them is about 75.2 percent lower ($p < 0.001$) than for those who do not have the employer-provided health insurance. Similarly, the workers who have pension and retirement plans through employers are less likely to use public benefits; the odds of using public benefits for them is about 20.8 percent lower ($p < 0.05$) than the odds for those who do not have pension and retirement plans through employers.

The results for year 2011, on the other hand, does not provide statistically significant evidence to support the association between public benefit use and the size of the firm. However, as for previous years, part-time workers and the workers with work limitation due to disability are more likely to use public benefits than those working on a full-time basis and those without work limitation, respectively, controlling for other covariates. While employment sector is not significantly associated with public benefit use, employer-based private benefits show a significant association with participation in the public benefit programs. Workers who have health insurance covered by employers are less likely to use public benefits; the odds of using public benefits for them is about 69.2 percent lower ($p < 0.001$) than for those without health insurance covered by employers, holding other predictors. Similarly, the odds of using public benefits is about 21.4 percent lower ($p < 0.01$) for the low-income workers who have pension and retirement plans provided by employers than for those who do not, controlling for other covariates.

According to the year 2009 results, low-income workers living in the states whose governors have a Democratic political orientation are more likely to use public benefits; the odds of using public benefits for them is about 37.2 percent greater ($p < 0.001$) than the odds for those living in the states whose governors have a Republican political affiliation. However, in 2011 there is no statistically significant association between political affiliation of state governor and the public benefit use by the low-income workers. (Table B.2 and Table B.4 provide the results of the statistical analyses.)

Year 2010 and Year 2012

The results of year 2010 and year 2012 data are not considerably different than the results of year 2009 data. The part-time workers and the workers having work limitation due to disability are more likely to use public benefits than those working on the full-time basis and the workers without any work limitation respectively. Firm size, however, does not have a significant association with the public benefit use. Also, the employment sector is not significantly associated with public benefit use.

As for the political affiliation of state governors, similar to 2011, there is no statistically significant association with public benefit use in 2012. (Table B.3 and Table B.5 provide the results of the statistical analyses.)

5.3 Economic Conditions and Public Benefit Use by Low-Income Workers

This section analyzes how the recent economic recession in the United States affects public benefit use among low-income workers and whether there is a difference in their use of public benefits in the year when the economic recession occurred, during the period of the recession, and in the years following the end of economic recession in the United States (Research Question 4). The recent economic recession (Great Recession) in the United States was officially announced in December 2008 by the National Bureau of Economic Research and it officially ended in June 2009. (Table B.6 provides statistical results for the analyses.)

Pooled data - Year from 2008 to 2012

This study also analyzes the pooled data for the years from 2008 to 2012. The analysis for the pooled data also applied survey weights and adjusted standard errors for clustering in primary sampling units as in the analyses for the individual year data. On the whole, the coefficient estimates of predictors are similar to those reported for each of the years individually, but the following points are noteworthy.

Based on the pooled data from 2008 until 2012, the age group of 25 to 34 are more likely to use public benefits than the age group of 18 to 24 (reference group). The odds of using public benefits at age 25 to 34 is about 35.3 percent greater ($p < 0.001$) than at age 18 to 24, controlling for other covariates. By contrast, the age group of 55 to 64 is less likely to use public benefits than the group of age 18 to 24; the odds of using public benefit is about 35.9 percent lower ($p < 0.001$) for the older age group than for the young age group, holding other predictors constant. Female low-income workers are more likely to use public benefits than male low-income workers; the odds of using public benefits is about 2.4 times ($p < 0.001$) as great for the female workers as the odds for the male low-income workers, controlling other covariates. Regarding the race predictors, African Americans, Asians, and other minority race groups are more likely to use public benefits than Whites, controlling other covariates.

As in the case of divorced and separated workers, controlling other covariates, the never-married low-income workers are also more likely to use public benefits than married workers, which is statistically significant by contrast with the results from the year by year analyses. The odds of using public benefits is about 29 percent greater ($p < 0.01$) for those who never-married than for those who are married. And, the male or female only head of households (one parent households) are more likely to use public benefits than married couple households. The odds of using public benefits is about 49 percent greater ($p < 0.001$) for households with male heads of households than for the married couple households; the odds of using public benefits is about 2.4 times ($p < 0.001$) as great for households with female heads of households as the odds for the married couple households, holding other predictors constant.

As for the labor market components, part-time workers and workers with work-limitation are more likely to use public benefits, but the pooled data does not provide evidence for an association between public benefit use and the other labor market components. Instead, employer-based private benefits (health insurance coverage from employers) and the political affiliation of state governors are associated with public benefit use by the low-income workers. In general, the odds of using public benefits is about 29.3 percent lower ($p < 0.001$) for workers who have health insurance coverage from their employers than for those who do not. And, the odds of using public benefits l is approximately 26 percent greater ($p < 0.001$) for workers living in states whose governors have a Democratic political affiliation than those who live in the states whose governors are Republican.

In sum, the overall results from the pooled data are similar to the results from the respective year data, but based on the longer time periods of the observation, the results appear to imply impacts of the fluctuation of the economic conditions for the five years from 2008 until 2012 in the United States.

Economic conditions and public benefit use

The results of the pooled data show that the low-income workers are more likely to use public benefits in the years under economic recession and even the subsequent years for a while after the economic recession ends. From year 2010 to year 2012, following years after the economic recession officially ended, low-income workers are more likely to use public benefits than in the year 2008. The odds of using public benefits is about 21.7 percent greater ($p < 0.01$) in the year 2010 than in the year 2008; the odds of using public benefits in the year 2011 is about 23.8 percent greater ($p < 0.001$) than in the year 2008; and the odds in the year 2012 is about 25.4 percent greater ($p < 0.001$) than the odds in the year 2008, controlling for other covariates. There is, however, no evidence for increased odds of public benefit use in 2009 compared with 2008. These results suggest that the low-income workers are more likely to be vulnerable to the economic recession, continuously even after the economic recession ends based on the economic indicators.

5.4 Variation in the Public Benefit Use: Household- and State-Level Variation

Mixed effect analysis with multilevel modeling

This study also conducted mixed-effects logistic regression for each year's data with fixed coefficients of covariates and a random intercept for household and state.

The mixed effect logistic regression with three-levels can be written as follows:

Level 1 Model: Individual level

$$\log [p_{ijk} / (1 - p_{ijk})] = \beta_{0jk} + \beta_1 X_{1ijk} + \beta_2 X_{2ijk} + \beta_3 X_{3ijk} + \ldots.. + \beta_n X_{nijk}$$

X: predictors for individual characteristics
n: number of covariates as predictors at individual level

Level 2 Model: Household-level

$$\beta_{0jk} = \gamma_{00k} + \gamma_{01}W_{1jk} + \gamma_{02}W_{2jk} + \ldots\ldots + \gamma_{0q}W_{qjk} + r_{jk}$$

W: predictors related to household and family
q: number of covariates as predictors at household level
r_{jk}: random intercept - residual effect at the household level within the same states

Level 3 Model: State-level

$$\gamma_{00k} = \alpha_{000} + \alpha_{001}Z_{1k} + \alpha_{002}Z_{2k} + \ldots + u_k$$

Z: predictors related to state
u_k: random intercept - residual effect at the state level

After controlling for covariates, public benefit use is correlated for individuals in the same households and states because of shared influences not captured by the covariates (Rabe-Hesketh & Skrondal, 2012; StataCorp, 2013). To examine between household- and state-level variation, intraclass correlations are provided.

Using the year data respectively, this study also conducted mixed-effect logistic regression analysis with robust standard errors (based on the sandwich estimator). The overall results, however, did not differ greatly from those with model-based standard errors (observed information matrix). Therefore, this analysis section refers to the results based on model-based standard errors. Table C.1 through Table C.5 in the Appendix provide the mixed effect logistic regression estimates.

Variations in the public benefit use

This section analyzes to what extent the residual variation in public benefit use by low-income workers can be attributed to the variation between households in the same states and to variation between states (Research Question 5). To be precise, the correlations are for the latent responses underlying observed public benefit use, after controlling for the covariates included in the model.

Table 5.1. Intraclass Correlation

Level	ICC	Standard Error	95% C. I.	
Year 2008				
State	0.0290	0.0099	0.0148	0.0563
Household nested in State	0.5602	0.0438	0.4733	0.6435
Year 2009				
State	0.0481	0.0153	0.0256	0.0886
Household nested in State	0.5936	0.0449	0.5036	0.6777
Year 2010				
State	0.0270	0.0110	0.0121	0.0591
Household nested in State	0.5325	0.0422	0.4496	0.6136
Year 2011				
State	0.0311	0.0109	0.0155	0.0612
Household nested in State	0.4715	0.0482	0.3791	0.5659
Year 2012				
State	0.0277	0.0120	0.0117	0.0639
Household nested in State	0.4561	0.0745	0.3176	0.6017

Note: ICC - intraclass correlation

Table 5.1 provides the corresponding intraclass correlations, namely the intraclass correlation at the state level (level-three) and the intraclass correlation at the household (level-two) within the state level. In other words, the first represents the residual correlation between public benefit use among the low-income workers (in the different households but) in the same state; the second describes the residual correlation between public benefit use among the low-income workers in the same household and state. The intraclass correlations are similar across the years. However, it is notable that controlling for all covariates, public benefit use by the low-income workers is only slightly correlated at the state-level, but it is fairly correlated at the household-level within the same states.

In the year 2008, it is estimated that 56 percent of the total residual variance is between households within states, which corresponds to a within-household correlation of 0.56. Similarly, in the year 2009 and in the year 2010, the within-household correlation is, about 0.59 in 2009 and about 0.53 in 2010. In the year 2011 and in the year 2012, controlling for all the fixed effects covariates, the public benefit use by the low-income workers is also highly correlated within households, while it is just slightly correlated within states, between households. The results in 2011 and 2012 follow a similar pattern, but with lower within-household correlations of 0.47 in 2011 and 0.46 in 2012.

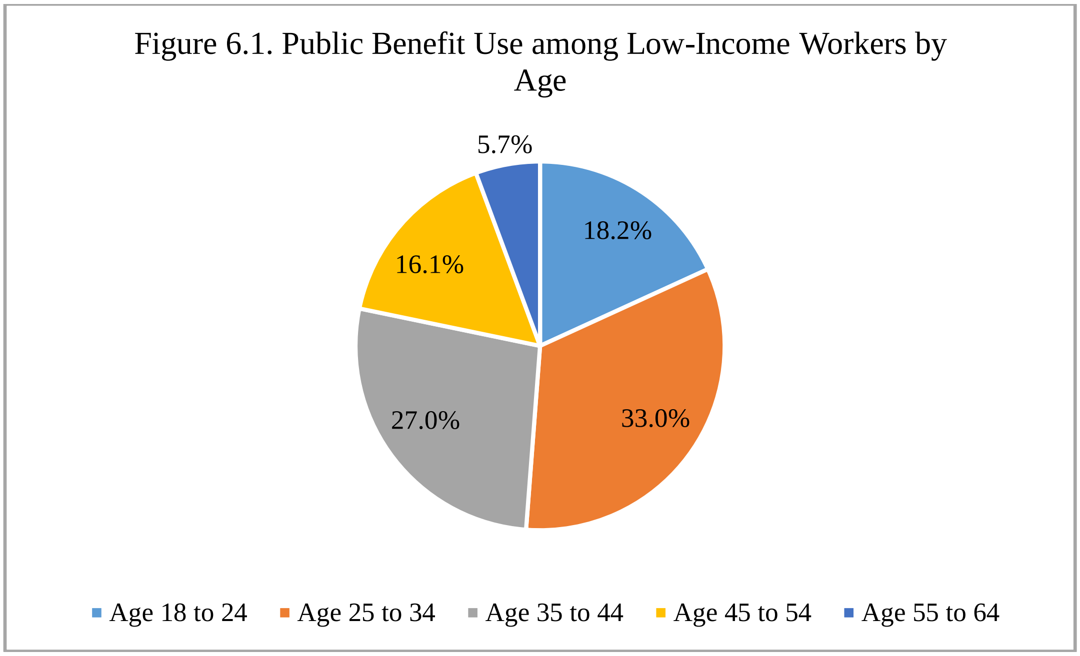
Chapter 6. Revisiting Labor Market and Social Protection: Study Implication and Conclusion

This dissertation research was developed to examine the association between the labor market and public benefit programs and policies; the employment sector and employer-based private benefits were major factors in the analyses in addition to the characteristics of the individual workers and their family structures. Reflecting characteristics in of the labor market and social welfare system in the United States, this chapter discusses significant findings and results from the analyses. Throughout the discussion, the proposed study questions are considered within the frame of dualization, a theoretical concept of this dissertation research.

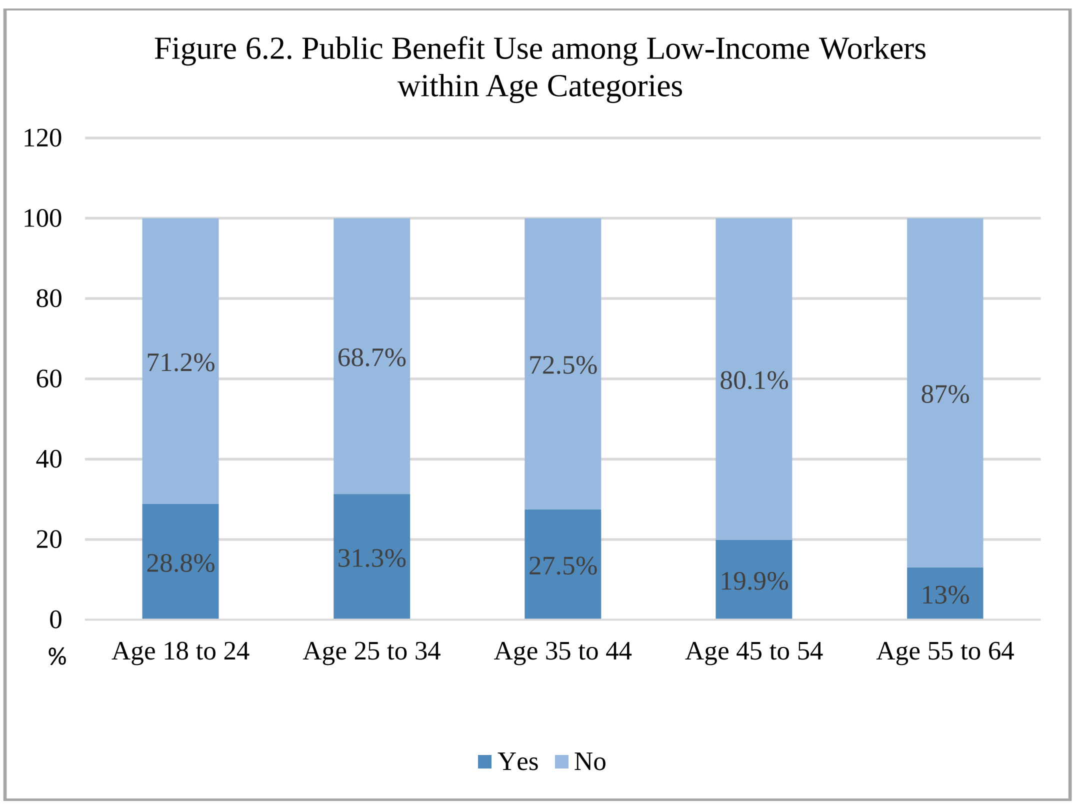
The current economic and social welfare policies in the United States, particularly for the socioeconomically disadvantaged population, substantially affect economic well-being and the adequacy of social protection, increasing disparity between low-income workers and those engaged in the upper levels of the labor market. This study includes several covariates that identify characteristics at the individual level, family- and household-related factors, and labor market components in order to analyze associations with public benefit use among low-income workers.

Individual characteristics of low-income workers and the relationship with public benefit use

According to the findings, some individual characteristics—age, race, citizenship, and marital status—were significant in estimating a relationship with low-income workers' participation in public benefit programs. In general, based on the results of this study, among low-income workers, young adults aged 25 to 34 are more likely to participate in public benefit programs. The middle adult group aged 35 to 44 is also vulnerable to the economic downturn, and therefore more likely to use public benefits compared to the other age groups. For example, young adults aged 18 to 44 accounted for approximately 76 to 80 percent of public benefit use in the years, from 2008 to 2012, as shown in Table A.1 in the Appendix. The following Figure 6.1 and Figure 6.2 also show the percentage of public benefit use among low-income workers by age.



Note: This figure was created from the data used for this study. It shows the average percentage of public benefit use by low-income workers from 2008 to 2012.



Note: This figure was created from the data used for this study. It shows the average percentage of public benefit use by low-income workers from 2008 to 2012.

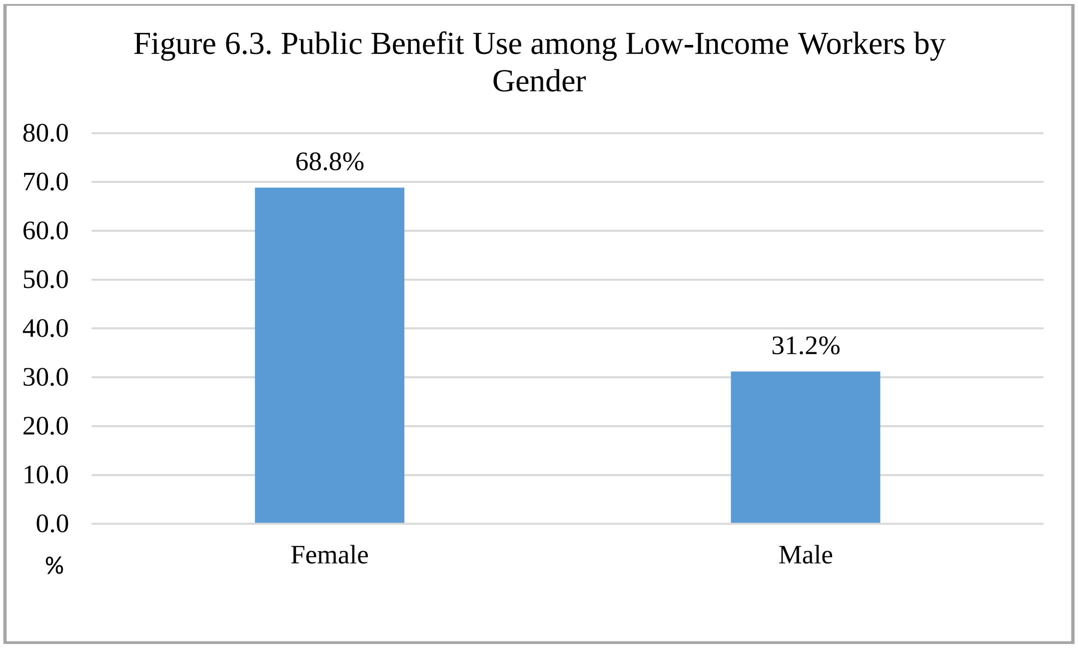
While females and minorities are more likely to use public benefits among low-income workers, an educational attainment of less than high school is not significantly associated with the public benefit use by low-income workers. This indicates that a high school diploma can be a substantial factor in entering the labor market and that it may not be directly associated with participating in the public benefit use of workers in the low-wage labor market.

Race and ethnicity classifications are also noteworthy with regard to low-income workers' participation in public benefit programs. As discussed in the analytical results in a previous chapter, African Americans and other racial minority groups are more likely to use public benefits than Whites, the predominant racial group. Although workers from these minority groups are engaged in the labor market to take economic responsibility for their families, they are exposed to greater economic risks than Whites are. Even if Asian workers are relatively less likely to use public benefits than other racial minority groups, they are still susceptible to economic recession; therefore, they also need the economic support of public benefits, particularly during a period of economic downturn.

As the majority of individuals in the United States have citizenship, it is reasonable that American citizens are, by and large, more likely to use public benefits than those who are not granted citizenship in the United States. Also, the marital status of individual workers should be noted. As previously indicated, those who are divorced or separated are more likely to use public benefits than those who are married.

On the other hand, these individual characteristics such as young adult groups, female, and marital status in relation to public benefit use can be attributed to family and household structures, including dependent children and the income-to-poverty ratios of their family and households. This tendency towards public benefit use reflects the design of the current public benefit programs in the United States, which focus on supporting economically vulnerable families.

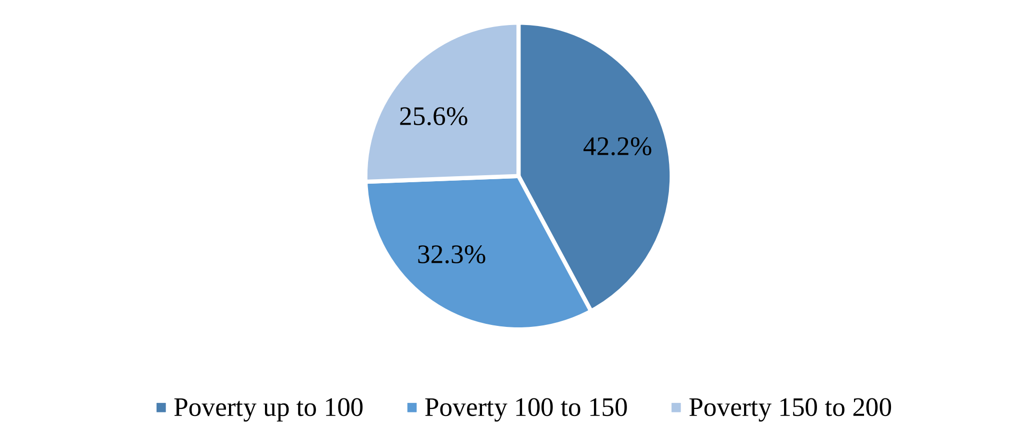
Household-related factors, such as family composition and income-to-poverty ratios, are also important to note. Single female heads of household are more likely to use public benefits than married couples were. As described in Table 4.1 in the Chapter 4, female heads of household account for about 45 to 49 percent of the sample population in this study of low-income workers. Table A.1 shows that female accounted for about 68 to 70 percent among low-income female workers who participated in public benefit programs. Likewise, families having dependent children are more likely to use public benefits than those not having dependent children; this result is also aligned with descriptive statistics showing that approximately 75 percent of those who participate in public benefit programs have dependent children in their families. The following Figure 6.3 also shows the percentage of public benefit use among low-income workers by gender.



Note: This figure was created from the data used for this study. It shows the average percentage of public benefit use by low-income workers from 2008 to 2012.

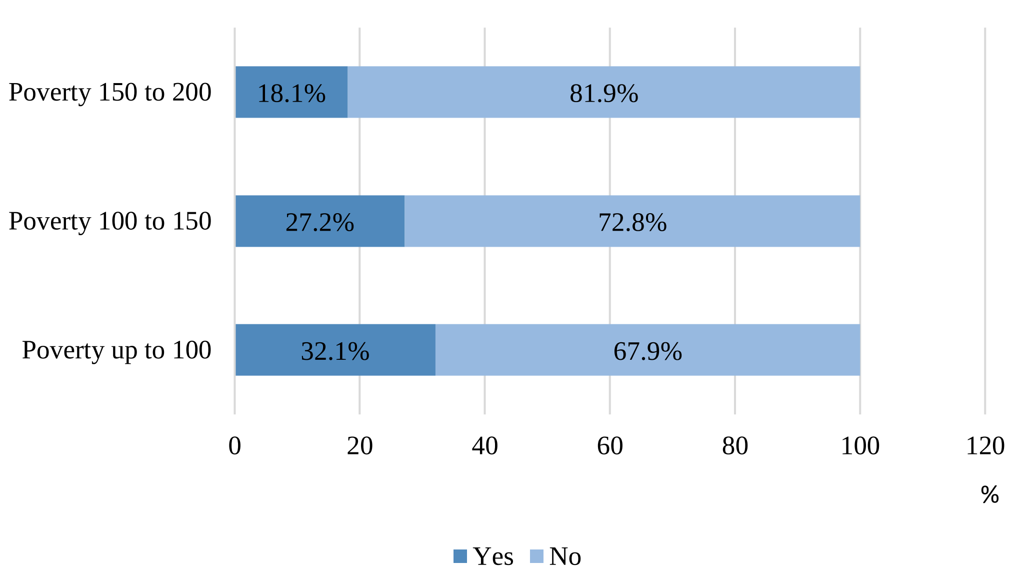
To determine the relationship between poverty thresholds and public benefit use, this study included the income-to-poverty ratio of households in the analyses. The eligibility requirements for public benefit programs vary, even if they are part of means-tested programs. On the whole, workers who fall below poverty line—that is, equal to or below 100 percent of the income-to-poverty ratio—are certainly more likely to use public benefits than those living in the households whose income-to-poverty ratios are higher than official poverty lines. However, it is worth noting that those living in households between 150 percent and 200 percent of the income-to-poverty ratio still use public benefits. Table A.1 shows that approximately 24 to 27 percent of low-income workers who receive public benefits live in households whose income-to-poverty ratio is between 150 percent and 200 percent. The following Figure 6.4 and Figure 6.5 also show the percentage of public benefit use among low-income workers by income-to-poverty ratios.

Figure 6.4. Public Benefit Use among Low-Income Workers by Income-to-Poverty Ratio



Note: This figure was created from the data used for this study. It shows the average percentage of public benefit use by low-income workers from 2008 to 2012.

Figure 6.5. Public Benefit Use among Low-Income Workers within Categories of Income-to-Poverty Ratio



Note: This figure was created from the data used for this study. It shows the average percentage of public benefit use by low-income workers from 2008 to 2012.

Employment sector, employer-based private benefit, and public benefit use

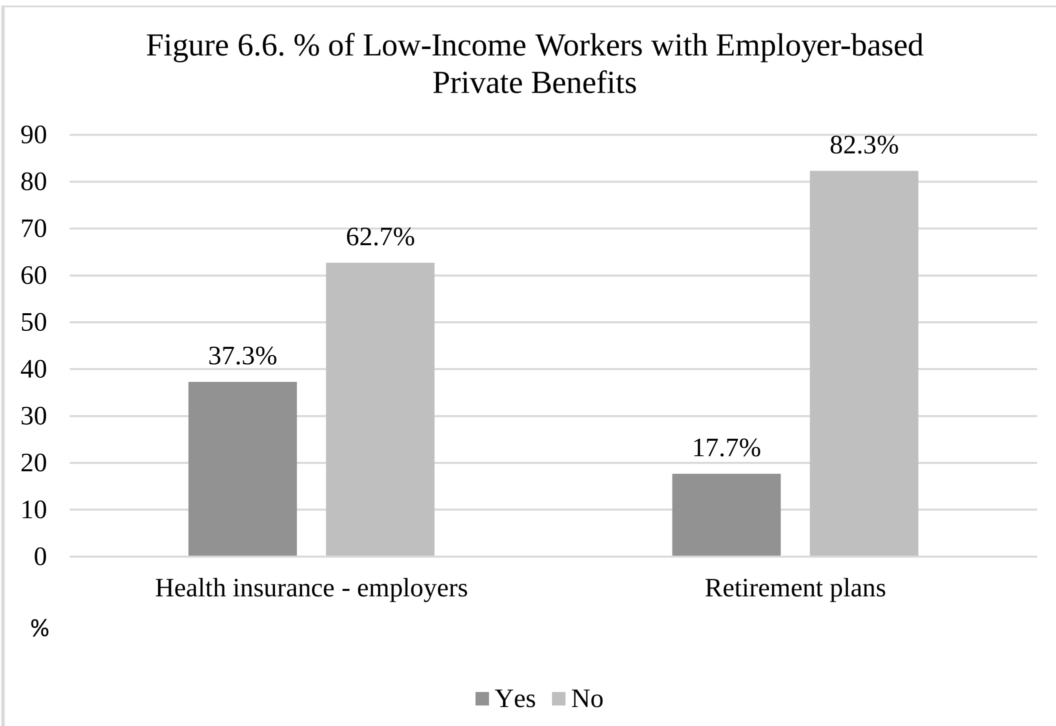
As previously discussed, some of these individual characteristics and family- and household-related covariates are significantly associated with public benefit use by low-income workers. Furthermore, the major findings of this study also indicate how these individual characteristics can be integrated with labor market factors such as employment sector, private benefits, part-time employment, and firm size in explaining the relationship between these factors and low-income workers' public benefit use.

First of all, the characteristics of the labor market, particularly employment sectors (public versus private employment) and employer-based private benefits should be noted with participation in the public benefit programs among low-income workers. Most notably, no significant relationship was found between employment sector (private versus public employment) and the public benefit use by low-income workers. Existing research indicates that low-income workers are predominant in the secondary labor market. Also, as discussed in the chapter about insiders versus outsiders in the labor market, they are still considered outsiders among labor market participants. In short, low-income workers are at the front line for potential risks of the labor market and economic conditions, such as insecurity and instability of job opportunities and earnings. The results of this study have indicated that the public versus private employment sector does not have a significant influence on low-income workers' participation in public benefit programs.

This finding implies that the low-wage labor market is already a lower-level segmentation and that the employment conditions and benefits provided through employers in the labor market are not significantly different between the public and private sectors. This argument is also reinforced by previous studies on the labor market in the United States. As Quadrini and Trigari (2007) addressed, the public employment sector in the United States tends to follow the market mechanism in wage determination. Such a wage trend in the public employment sector is important for low-income workers. On the one hand, the market system controlling wage levels can be affected by union power, which also negatively affects wage bargaining for low-income workers in the public employment sector as well as in the private sector. On the other hand, it is also apparent that minimum wage policy can be applied to low-wage work in both public and private employment sectors. In essence, the trend of controlling wage levels by market mechanism eventually diminishes a potential advantage of wage stability in the public sector, particularly for low-income workers. Therefore, the minimal difference in the level of earnings between the public and private employment sectors is not likely to affect choices of low-income workers to participate in public benefit programs subject to means tests.

The availability of employer-based private benefits, particularly health insurance and pensions (and retirement plans), is also significantly related to public benefit use by low-income workers. The results of this study indicates that if low-income workers have health insurance covered by employers, they are significantly less likely to use public benefits. Also, low-income workers who have pension and retirement plans supported by employers are expected to show a similar pattern regarding participation in public benefit programs.

The relationship between public benefit use and employer-based private benefits is another crucial finding of this study, but it also draws attention to an implicit inequality for low-income workers who have limited opportunities for the private benefits provided through employers. It should be noted that among low-income workers, approximately 37 percent would have health insurance provided from their employers, and only about 18 percent of low-income workers would have pension and retirement plans supported by their employers among the study population. Table A.4.1 describes the overall coverage of employer-based benefits among low-income workers. The following Figure 6.6 also shows the average percentage of low-income workers who had the coverage of health insurance and pension and retirement plans provided by their employers in the years 2009 and 2011.



Note: This figure was created from the data used for this study. It shows the average % of low-income workers who had health insurance and pension/retirement plans provided by their employers in 2009 and 2011.

This finding aligns with the concern and argument of Titmuss (1965) and Hacker (2002) regarding private social benefits that could result in an unequal distribution greater than public benefits. Hacker (2002) specifically identified such features of inequality in the social protection system as the *divided welfare*. The welfare state in the United States, as discussed in previous chapters, has developed on the grounds of individualism and market mechanism, which emphasize individual responsibilities for economic security through labor market participation. The results of this study also indicate that the structural root of social protection in the United States overlooked the drawbacks of the labor market, which is stratified and characterized by segmentation. In essence, the socioeconomically disadvantaged, the foremost eligible population for social protection, are more likely to be excluded from adequate economic safety, even if they make efforts to fulfill their responsibility in the labor market.

In addition to these factors, part-time employment and firm size need to be addressed with regard to public benefit use by low-income workers. While employment sector is not significantly related to public benefit use, this study shows that those who work on a part-time basis are obviously more likely to use public benefits than regular full-time workers. As Table 4.1 describes, about 42 to 46 percent of the study population were part-time workers. This result is also meaningful because it reflects the characteristics of the low-wage labor market, which affect the accessibility of employer-based private benefits to low-income workers and therefore cause inequality in the social protection offered by employers.

This finding is strengthened by existing research on flexibility issues in the labor market, particularly in the United States and in other economically advanced countries. As reviewed in previous chapters, low-wage and less-skilled workers are frequently targeted for flexible employment policies in the labor market when compared to professionals and those with high incomes. On the labor demand side, employers may attempt to reduce labor cost and avoid providing employer-based private benefits by hiring employees on a part-time basis or through temporary contracts. Consequently, low-income workers have limited social protection from employment benefits caused by work type and a low-level of segmentation in the labor market.

Like employment sector, firm size mostly was not significantly related to public benefit use by low-income workers in this study. Only results from 2009 showed that low-income workers engaged in firms with more than 100 employees were more likely to use public benefits. It was initially assumed that those workers engaged in small firms might be more likely to use public benefits, but this study found that firm size did not influence public benefit use among low-income workers. This indicates that employment conditions (e.g., wage and employment benefits) for low-income workers do not differ between firms with small and large numbers of employees. In other words, regardless of firm size, the levels of wage and employment benefits are defined by particular work types, and low-income workers are separated from other work divisions at the point they enter labor market. The characteristics of low-wage work and the low-income labor market also can be closely related to work limitations due to injury or disability caused by an inferior work environment.

These findings related to labor market components are noteworthy to discuss regarding the dualization concepts reviewed in a previous chapter. In short, the notion of dualization underscores the process of creating and intensifying institutional dualism, which ultimately results in unequal treatment, specifically with respect to the labor market and social protection. As examined throughout this study, low-income workers are still regarded as outsiders among labor market participants, and they are also typically excluded from employer-based benefits because they are mostly engaged in the lower segment of the labor market. This study addresses an important point that the divided labor market and social protection system in the United States have substantially reinforced dualization in the economic and social communities. In addition, the closed employment system also played a role in strengthening institutional dualism in the labor market and in expanding disparity in social protection for low-income workers. Consequently, low-income workers are exposed to interlocking risks involving job insecurity, income instability, and inequality of social protection.

Political affiliation, economic recession, and variation of public benefit use

According to the results of this study, the democratic affiliation of state governors is positively associated with the public benefit use by low-income workers. This finding was predominant particularly during the economic recession, year 2008 to 2010. The liberal or progressive perspectives regarding the government’s roles in social protection for the socioeconomically disadvantaged population could be reflected in the state policies and programs. In general, economic recession substantially influences public benefit use among low-income workers. The results of this study show that the economic risks to which low-income workers are exposed are greater during years of economic recession, and even the years following the end of the economic recession, than in the year before the economic recession is announced. This finding implies that politics and institutions regulating the labor market and social protection interact each other. Therefore, dualization in society can be strengthened through interactions between the labor market and social protection, particularly in the periods of economic downturn.

Finally, it has been shown that the variations in the public benefit use among low-income workers are related to the household-level rather than the state-level. This result is understandable because the individual factors were significantly related to family and household characteristics, which were reflected in the results of the random intercept models.

Conclusion

In conclusion, the low-wage labor segment will continue to exist as part of the economic system and will increase the dualization and inequality in social protection as well as in the labor market. Low-income workers cannot obtain sufficient social protection through their employers, given current labor market structure and social protection system. Furthermore, they may not be eligible for certain types of public benefits, and if they are eligible for any public benefit programs, the public benefits provided to support their economic hardships are at the minimum level.

The degree of public benefit use by low-income workers can be explained in relation to whether they are engaged in the labor market and if the employment conditions for the workers are adequate for their economic security. Although this study found that the public and private employment sectors are not significantly related to public benefit use, the level of coverage from employer-based benefits and workplace conditions are determined by labor market segmentation. Accordingly, emphasizing labor market participation alone will not be an effective and reliable solution for low-income workers to be protected from economic insecurity and potential risks.

In a nutshell, this dissertation study has argued that the structural divides both in the labor market and in social protection in the United States have impeded the possibility of radical change to secure economic safety for the socioeconomically disadvantaged and the working poor in particular. Also, it appears that politics regulating labor market institutions and social protection has not created impacts that could leverage positive interaction between the labor market and social protection. Rather, the current policies for social protection in the United States have developed without consideration of the divided labor market.

The dualization process, as a result, has increased the disparity of economic and social positions between insiders and outsiders, which strengthens the social divide. Specifically, low-income workers can be classified as insiders in that they are employed and participate in the labor market; however, they are still outsiders within labor market participants because they are often excluded from employer-provided benefits. Therefore, this research agrees with the argument that dualization and social divides are ongoing challenges in advanced societies (Emmenegger et al., 2012). It should be noted that the roles of government and policy administrators are important because political decisions on social protection and labor market policies could lead to either social divides or consolidation.

In addition, this dissertation research has focused on public benefit programs at the federal level, without particular consideration of respective eligibility for the programs implemented by individual states. Also, this research covered a limited scope of labor market segments instead of including specific industries or occupations in the analyses. Further research related to this dissertation study could consider these factors pertaining to the labor market and political affiliations, which may have an impact on social protection for low-income workers.

References

Acemoglu, D. (2002, March). Technological change, inequality, and the labor market. *Journal of Economic Literature*, *40*, 7-72.

Adema, W. (2001). *Net social expenditure* (2nd ed.). (OECD Labour Market and Social Policy Occasional Papers, No. 52). Paris, France: OECD Publishing.

Ajilore, O. (2008). The impact of the Earned Income Tax Credit on poverty: Analyzing the dimensions by race ad immigration. *Rev Black Polit Econ*, *35*, 117-127.

Alesina, A., Baqir, R., & Easterly, W. (1998, October). *Redistributive public employment*. (NBER WP 6746). Cambridge, MA: NBER.

Algan, Y., Cahuc, P., & Zylberberg, A. (2002, April). Public employment and labour market performance. In Public employment: Does it increase unemployment? *Economic Policy*, *17*, 9-65.

Axinn, J. (2005). *Social welfare: A history of the American response to need*. Boston: Pearson/Allyn and Bacon.

Bartfeld, J (2016). SNAP and the school meal programs. In *SNAP matters: How food stamps affect health and well-being* (pp. 186-212). J. Bartfeld, C. Gundersen, T. M. Smeeding, & J. P. Ziliak (Eds.). Stanford: Stanford University Press.

Bartfeld, J., Gundersen, C., Smeeding, T. M., & Ziliak, J. P. (2016). Introduction. In *SNAP matters: How food stamps affect health and well-being* (pp. 1-17). J. Bartfeld, C. Gundersen, T. M. Smeeding, & J. P. Ziliak (Eds.). Stanford: Stanford University Press.

Berger, S. & Piore, M. J. (1980). *Dualism and discontinuity in Industrial Societies*, Cambridge: Cambridge University Press.

Blank, R. (1985). An analysis of workers' choice between employment in the public and private sectors. *Industrial and Labor Relations Review*, *38*(2), 211-224.

Blank, R., Danziger, S. H., & Schoeni, R. F. (2006). Work and poverty during the past quarter-century. In R. Blank, S. Danziger, & R. Schoeni (Eds.), *Working and the Poor: How economic and policy changes are affecting low-wage workers* (pp. 1-20). New York: Russell Sage Foundation.

Boeri, T., & van Ours, J. (2008). *The economics of imperfect labor markets*. Princeton: Princeton University Press.

Briggs, A. (1961). The welfare state in historical perspective. *European Journal of Sociology*, *2*(2), 221-258.

Bullock, H. E. (1995). Class acts: Middle-class responses to the poor. In B. Lott & D. Maluso (Eds.), *Social psychology of interpersonal discrimination* (pp. 118-159). New York: Guilford Press.

Bulow, J. I., & Summers, L. H. (1986). A theory of dual labor markets with application to industrial policy, discrimination, and Keynesian unemployment. *Journal of Labor Economics, 4*(3), 376-414.

Cain, G. G. (1975). The challenge of dual and radical theories of the labor market to orthodox theory. *The American Economic Review*, *65*(2), 16-22.

Caminada, K., & Goudswaard, K. P. (2010). How well is social expenditure targeted to the poor? In P. Saunders and R. Sainsbury (eds.), *Social Security, poverty and social exclusion in rich and poorer countries* (pp. 97-112). International Studies on Social Security, volume 16, Mortsel, Belgium: Intersentia.

Congressional Budget Office (2013). Growth in means-tested programs and tax credits for low-income households (CBO Pub. No. 4504). Retrieved from https://www.cbo.gov/publication/43934

Currie, J. (2003). U.S. Food and nutrition programs. In *Means-Tested Transfer Programs in the United States* (pp. 199-289). R. Moffitt (Ed.), Chicago: University of Chicago Press.

Cusack, T., Notermans, T., & Rein, M. (1989). Political-economic aspects of public employment. *European Journal of Political Research*, *17,* 471-500.

Daguerre, A. (2008). The second phase of US Welfare Reform, 2000 - 2006: Blaming the poor again? *Social Policy and Administration*, *42*(4), 362-378.

Davisson, J., & Naczyk, M. (2009). *The Ins and Outs of Dualisation: A Literature Review*. (REC-WP 02/2009). Edinburgh: RECWOWE Publication

Dickens, W. T., & Lang, K. (1992, June). *Labor market segmentation theory: Reconsidering the evidence* (NBER Working Paper No. 4087). Cambridge, MA: NBER.

Doeringer, P. & Piore, M. (1971). *Internal labor markets and manpower analysis*. Lexington, MA: D.C. Heath.

Emmenegger, P., Häusermann, S., Palier, B., & Seeleib-Kaiser, M. (Eds.) (2012). How we grow unequal. In P. Emmenegger, S. Häusermann, B. Palier, & M. Seeleib-Kaiser (Eds.), *The age of dualization* (pp. 3-26). New York: Oxford University Press.

Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press.

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

Forstater, M. (1998). Flexible Full Employment: Structural Implications of Discretionary Public Sector Employment. *Journal of Economic Issues*, *32*(2), 557-563.

Freeman, R. B., & Gottschalk, P. (Eds.) (1998). *Generating jobs: How to increase demand for less-skilled workers*. Introduction (pp. 1-17). New York: Russell Sage Foundation.

Gilbert, N. (2002). *Transformation of the welfare state: The silent surrender of public responsibility*. New York: Oxford University Press.

Gilbert, N. (2010). Comparative analyses of stateness and state action: What can we learn from patterns of expenditure? In J. Alber and N. Gilbert (Eds.) *United in diversity: comparing social models in Europe and America* (pp. 133-150). Oxford; New York: Oxford University Press.

Gilbert, N., & Terrell, P. (2010). *Dimensions of social welfare policy* (7th ed.). Boston: Allyn & Bacon.

Golsch, K. (2005). *The impact of labor market insecurity on the work and family life of men and women: A comparison of Germany, Great Britain, and Spain*. Frankfurt am Main, Germany: Peter Lang.

Gornick, J. & Jacobs, J. (1998). Gender, the welfare state, and public employment: A comparative study of seven industrialized countries. *American Sociological Review, 63*(5), pp. 688-710.

Goudswaard, K., & Caminada, K. (2008). The redistributive impact of public and private social expenditure (MPRA Paper No. 20178). Retrieved from http://mpra.ub.uni-muenchen.de (Munich Personal RePEc Archive).

Grogger, J. (2002). The behavioral effects of welfare time limits. *The American economic review, 92*(2), 385-389.

Gruber, J. (2003). Medicaid. In *Means-tested transfer programs in the United States* (pp. 15-77). R. Moffitt (Ed.), Chicago: University of Chicago Press.

Gruber, J. (2012). *Public finance and public policy* (4th ed.). Chicago: Worth.

Hacker, J. S. (2002). *The divided welfare state: The battle over public and private social benefits in the United States*. New York: Cambridge University Press.

Hacker, J. S. (2006). *The great risk shift: the assault on American jobs, families, health care, and retirement and how you can fight*. Oxford; New York: Oxford University Press.

Hanson, K., & Oliveira, V. (2012). *How economic conditions affect participation in USDA nutrition assistance programs*. (Economic Information Bulletin No. 100, Economic Research Service). Washington, D.C.: U. S. Department of Agriculture.

Harrison B., & Osterman, P. (1974). Public employment and urban poverty: Some new facts and a policy analysis. *Urban Affairs Quarterly*, *9*(3), 303-336.

Hathaway, J. (2016). Tax Credits for Working Families: Earned Income Tax Credit (EITC). (NCSL Report, Updated a report previously written by Q. T. Flores). Retrieved from http://www.ncsl.org/research/labor-and-employment/earned-income-tax-credits-for-working-families.aspx

Häusermann, S., & Schwander, H. (2010). Restructuring Swiss welfare politics: Post-industrial labor markets, globalization and attitudes towards social politics. In S. Hug & H. Kriesi (Eds.), *Value change in Switzerland* (pp. 143-168). Lexington: Lexington Press.

Häusermann S., & Schwander H. (2012). Varieties of dualization? Labor market segmentation and insider-outsider divides across regimes. In P. Emmenegger, S. Häusermann, B. Palier, & M. Seeleib-Kaiser (Eds.), *The age of dualization* (pp. 27-51). New York: Oxford University Press.

Holzmann, R., & Jørgensen, S. (2001). Social risk management: A new conceptual framework for social protection, and beyond. *International Tax and Public Finance, 8*, 529-556.

Hotz, V. J., & Scholz, J. K. (2003). The Earned Income Tax Credit. In *Means-Tested Transfer Programs in the United States* (pp. 141-197). R. Moffitt (Ed.), Chicago: University of Chicago Press.

Immergut, E. (1986). Between state and market: Sickness benefits and social control. In M. Rein & L. Rainwater (Eds.), *Public/private interplay in social protection* (pp. 57-98). Armonk, NY: M. E. Sharpe.

Karger, H J., & Stoesz, D. (2014). *American social welfare policy: A pluralist approach*. Boston: Pearson.

Klijzing, E. (2005). Globalization and the early life course: A description of selected economic and demographic trends. In Blossfeld, H. P., Klijzing, E., Mills, M. and Kurz, K. (Eds.), *Globalization, Uncertainty, and Youth in Society* (pp. 25-49). London/NewYork: Routledge.

Leontaridi, M. R. (1998). Segmented labor markets: Theory and evidence. *Journal of Economic Surveys*, *12*(1), 63–101.

Lindbeck, A., & Snower, D. J. (1988). *The insider-outsider theory of employment and unemployment*. Cambridge: The MIT Press.

Lindbeck, A., & Snower, D. J. (2001, Winter). Insiders versus outsiders. *Journal of Economic Perspectives*, *15* (1), 165-188.

Lindbeck, A., & Snower, D. J. (2002). *The insider-outsider theory: A survey*. (IZA Discussion

Paper No. 534). Bonn, Germany: IZA.

Lobao, L., & Hooks, G. (2003, December). Public employment, welfare transfers, and economic well-being across local populations: Does a lean and mean government benefits the masses? *Social Forces, 82*(2), 519-556.

Mahler, V. A., & Jesuit, D. K. (2006). Fiscal redistribution in the developed countries: New insights from the Luxembourg Income Study. *Socio-Economic Review*, *4*, 483-511.

Marx, K. (1968). Wage labour and capital. In *Selected works [of] Karl Marx and Frederick Engels in one volume* (pp.72-96). New York: International Publishers.

McGuire, T., & Merriman, D. F. (2006). State spending on social assistance programs over the business cycle. In R. Blank, S. H. Danziger, & R. F. Schoeni (Eds.), Working and poor: How economic and policy changes are affecting low-wage workers (pp. 289-311). New York: Russell Sage Foundation.

Meyers, M., & Gornick, J. (2009). Beyond the safety net: Supporting the economic security of working-poor families. In C. Heinrich & J. Scholz (Eds.), *Making the work-based safety net work better: Forward-looking policies to help low-income families* (pp. 261-291). New York: Russell Sage Foundation.

Mikelson, K. S., & Lerman, R. I. (2004). *Relationship between the EITC and food stamp program participation among households with children*. (UI Project No. 07280-000-00, Prepared for USDA, Economic Research Service). Washington D.C.: Urban Institute. Retrieved from http://www.urban.org/sites/default/files/alfresco/publication-pdfs/411033-Relationship-between-the-EITC-and-Food-Stamp-Program-Participation-Among-Households-with-Children.PDF

Moffitt, R. (2003). The Temporary Assistance for Needy Families Program. In *Means-tested transfer programs in the United States* (pp. 291-363). R. Moffitt (Ed.), Chicago: University of Chicago Press.

Nash, J. (1950). The Bargaining Problem. *Econometrica*, *18*(2), 155-162.

OECD (2007). Social Expenditure database 1980-2003. Retrieved from www.oecd.org/els/social/expenditure

O'Higgins, M., Schmaus, G., & Stephenson, G. (1990). Income distribution and redistribution: A microdata analysis for seven countries. In T. M. Smeeding, M. O'Higgins, & L. Rainwater (Eds.). *Poverty, inequality and income distribution in comparative perspective*. Washington D.C.: The Urban Institute Press.

Pearson, M., & Martin, J. P. (2005). *Should we extend the role of private social expenditure?* (IZA Discussion Paper No. 1544). Retrieved from http://ftp.iza.org

Pierson, P. (1994). *Dismantling the welfare state*. New York: Cambridge University Press.

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

Pigou, A.C. (1945). *Lapses from full employment*. London: Macmillan.

Piketty, T. (2014). *Capital in the twenty-first century* (A. Goldhammer Trans.). Cambridge, MA: The Belknap Press of Harvard University Press.

Quadagno, J. (1987). Theories of the welfare state. *Annual Review of Sociology, 13*, 109-128.

Quadrini, V., & Trigari, A. (2007). Public employment and the business cycle. *Scandinavian Journal of Economics*, *109*(4), 723-742.

Rabe-Hesketh, S., & Skrondal, A. (2012). *Multilevel and longitudinal modeling using Stata* (3rd ed.). College Station, Texas: Stata Press Publication.

Reich, M., Gordon, D. M., & Edwards. R. C. (1973, May). Dual labor markets: A theory of labor market segmentation. *American Economic Association*, *63*(2), 359-365.

Rein, M., & Rainwater, L. (1986). The institutions of social protection. In M. Rein & L. Rainwater (Eds.), *Public/private interplay in social protection: A comparative study* (pp. 25-56).

Rosen, S. (1996). Public employment and the welfare state in Sweden. *Journal of Economic Literature*, *34*(2), 729-740.

Rupured, M. (2000). *Promoting upward mobility for the working poor*. Washington, D.C.: Farm Foundation.

Sawhill, I. V. & Haskins, R. (2002). Welfare reform and the work support system. In I. V. Sawhill, R. K. Weaver, R. Haskins, & A. Kane (Eds.), *Welfare reform and beyond: The future of the safety net* (pp. 107-119). Washington, D.C.: Brookings Institution Press.

Scholz, J., Moffitt, R., & Cowan, B. (2008). Trends in income support. (Paper prepared for the conference, “Changing Poverty,” held May 29-30, 2008 at the Institute for Research on Poverty at the University of Wisconsin, Madison). Retrieved from https://www.ssc.wisc.edu/~scholz/Research/Transfers_Chapter_2008_V6.pdf

Schwartz, J. E., & Volgy, T. J. (1992). *The Forgotten Americans*. New York: Norton.

Seeleib-Kaiser, M., Saunders, A., & Naczyk, M. (2012). Shifting the public-private mix: A new dualization of welfare? In P. Emmenegger, S. Häusermann, B. Palier, & M. Seeleib-Kaiser (Eds.), *The age of dualization* (pp. 151-175). New York: Oxford University Press.

Segal, E. A. (2007). *Social welfare policy and social programs: a value perspective*. Belmont, CA: Thomson Brooks/Cole

Snijders, T. A B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.). Los Angeles: Sage.

Solow, R. (1985). Insiders and outsiders in wage determination. *Scandinavian Journal of Economics, 87*(2), 411-428.

StataCorp. (2013). *Stata 13 Multilevel mixed-effects reference manual*. College Station, TX: Stata Press.

Stinchcombe, A. L. (1979). Social mobility in industrial labor markets. *Acta Sociologica*, *22*(3), 217-245.

Stoker, R. P. & Wilson, L.A. (2006). *When work is not enough*. Washington, D.C.: Brookings Institution Press.

Super, D. A. (2008). Privatization, policy paralysis, and the poor. *California Law Review*, *96*(2), 393-470.

Taylor, G. (2007). Ideology and welfare. New York: Palgrave.

Titmuss, R. (1958). *Essays on "The welfare state."* London: Allen & Unwin.

Titmuss, R. (1965, June). The role of redistribution in social policy. *Social Security*, *Bulletin*, 14-20.

Tomlinson M., & Walker, R. (2012). Labor market disadvantage and the experience of recurrent poverty. In P. Emmenegger, S. Häusermann, B. Palier, & M. Seeleib-Kaiser (Eds.), *The age of dualization* (pp. 52-70). New York: Oxford University Press.

United Nations Statistics Division (1993). *System of National Accounts 1993*. CEC-EUROSTAT, IMF, OECD, UN and the World Bank. Brussels/Luxembourg, New York, Paris, Washington, D.C. Retrieved from http://unstats.un.org/unsd/nationalaccount/docs/1993sna.pdf

U.S. Bureau of Labor Statistics (n.d.). Occupational Employment Statistics [Data file].Retrieved from https://www.bls.gov/oes/2014/may/featured_data.htm#private

U.S. Census. (n.d.). SIPP 2008 Users' Guide: Historical users' guides. Washington, D. C.: Author. Retrieved from http://www.census.gov/programs-surveys/sipp/guidance/users-guide.html

U.S. Department of Health and Human Services. (2015, October). *TANF*. Retrieved from Administration for Children & Families, Office of Family Assistance, http://www.acf.hhs.gov/programs/ofa/programs/tanf/about

U.S. Department of Labor. (1999). *A profile of the working poor, 1997* (BLS Report 936). Washington D.C.: Bureau of Labor Statistics.

Vincents, J. & Robinson, D. (1974). *Research into labour market behavior*. Paris: OECD.

Weaver, K. (2009). The politics of low-income families in the United States. In C. Heinrich & J. Scholz (Eds.), *Making the work-based safety net work better: Forward-looking policies to help low-income families* (pp. 292-338). New York: Russell Sage Foundation.

Wilensky, H., & Lebeaux, C. (1958). *Industrial society and social welfare*. New York: Russell Sage Foundation.

Appendix A: Addendum and Table

Why the individual year data were used for this study

One of the focuses of this research is to examine the public benefit use of low-income workers around the beginning of the recent Great Recession, during the period of the economic recession, and the following year(s) after the economic recession ended. Particular covariates that account for private benefits through employers, for example, have been collected only at certain time points rather than a year-basis, which is composed of topical data. Because the dataset for this study has merged two specific topical data—the years 2009 and 2011—for private benefits provided through employers, separate analyses by year have been conducted. The analysis using the pooled data is also included.

Why the certain time period of the individual data was selected

The observations for the year 2008 in the SIPP are relatively smaller than those for the other years because the collection of the data began in September 2008; however, the data for the year 2008 were necessary to investigate the research questions, and therefore a balance of the observations for each year from 2008 to 2012 was obtained by focusing on the data collection during certain periods of the year, which was from September through December.

Why the EITC program was not included in the public benefit programs for this study

As discussed in Chapter 3, the Earned Income Tax Credit (EITC) is one of the major public benefit programs for low-income workers. The topical data for the EITC benefit receipt in the SIPP data was not edited when this study was conducted; thus, the EITC was not included in the public benefit programs for this study. In other words, the public benefit programs examined in this study are defined as means-tested public programs administrated by the welfare system rather than controlled by the tax system. It is also noteworthy that this study focuses on public benefit programs that support labor market participation. The scope of public benefit programs are referred to as part of the work-support systems described by Stoker and Wilson (2006). The work-support systems were described as “a collection of policies and programs that redistribute income by providing material assistance (in the form of cash or in-kind benefits) to low-wage workers, low-income working families, and families making the transition from welfare to work” (Stoker & Wilson, 2006, p. 1). Consequently, according to the definition, the work-support programs (benefits) aim to support low-income workers or their dependent families in a broad manner rather than assisting particular groups of low-income workers.

Table A.1. Public Benefit Use among Low-Income Workers by Selected Variables

(%)

Public Benefit Use	2008	2009	2010	2011	2012	2008 - 12
Age						
age 18 to 24	20.6	20.5	17.1	16.3	17.2	18.2
age 25 to 34	33.2	32.6	34.2	33.0	32.3	33.0
age 35 to 44	26.7	26.3	27.1	28.4	26.6	27.0
age 45 to 54	14.4	15.3	16.4	16.9	17.0	16.1
age 55 to 64	5.2	5.3	5.2	5.4	6.9	5.7
Gender						
female	69.9	69.5	67.5	68.6	68.9	68.8
Race						
white	64.5	66.1	64.6	66.4	63.0	64.9
black	27.7	26.4	26.9	25.8	27.3	26.8
asian	2.9	2.3	3.4	3.0	3.5	3.0
race other	4.9	5.2	5.1	4.8	6.3	5.3
Marital Status						
married	28.9	30.0	33.2	30.1	30.9	30.7
divorced	18.4	18.4	17.6	18.2	16.9	17.9
never married	43.3	42.9	41.4	43.5	43.3	42.9
separated & others	9.4	8.8	7.8	8.3	8.9	8.6
Dependent Children						
with dependent children	74.3	74.9	75.3	74.9	74.9	74.9
Household Types						
married couple hh	31.1	32.0	35.6	31.7	34.9	33.2
male head of hh	7.4	7.7	8.3	7.2	7.7	7.7
female head of hh	49.3	48.3	45.1	48.0	44.5	46.9
other types of hh	12.2	12.0	11.0	13.1	13.0	12.3
Income-to-poverty ratios						
poverty up to 100	42.2	42.8	41.0	41.7	43.1	42.2
poverty 100 to 150	31.4	30.6	33.0	33.4	32.5	32.3
poverty 150 to 200	26.4	26.6	26.0	25.0	24.4	25.6

Note: This table was created by using survey crosstab through Stata. Total values of categories in each variable are equal to 100%.

Appendix B: Public Benefit Use by Low-Income Workers

Table B.1. Public Benefit Use by Low-Income Workers: Year 2008

Public Benefit Use	Year 2008			
	Coeff. Est.(a)	SE (b)		OR
Demographic variables				
age 25 to 34	0.18685	0.10970		1.2054
age 35 to 44	-0.07911	0.11798		0.9239
age 45 to 54	-0.33214	0.13896	*	0.7174
age 55 to 64	-0.59369	0.19479	**	0.5523
female	0.82202	0.07283	***	2.2751
black	0.63055	0.10046	***	1.8787
asian	0.42452	0.18243	*	1.5289
race other	0.36197	0.16103	*	1.4362
hispanic	0.04608	0.09862		1.0472
no highschool grad	0.00273	0.08917		1.0027
citizen US	0.49877	0.14720	**	1.6467
immigrant	-0.00361	0.13088		0.9964
divorced	0.62679	0.15611	***	1.8716
never married	0.20737	0.13409		1.2304
separated	0.84929	0.18970	***	2.3380
Family & Household variables				
household types				
male head of hh	0.38433	0.19970		1.4686
female head of hh	0.96719	0.13312	***	2.6305
other types of hh	0.07730	0.16890		1.0804
dependent child	1.06146	0.10256	***	2.8906
metro	-0.17423	0.08638	*	0.8401
poverty up to 100	0.31038	0.09594	**	1.3639
poverty 150 to 200	-0.29735	0.08725	**	0.7428
Labor market covariates				
private employment	-0.17277	0.10826		0.8413
part time work	0.23602	0.06402	***	1.2662
union member	0.00916	0.14282		1.0092
employee 25 to 99	-0.17559	0.09000		0.8390
employee over 100	-0.06285	0.09716		0.9391
log person earned income	0.01593	0.01799		1.0161
work limit	1.22409	0.14011	***	3.4011
unemployment rate	0.01278	0.03298		1.0129
Private benefit through employers				
health insurance	-1.27123	0.08836	***	0.2805
State political affiliation				
democratic	0.25647	0.06691	***	1.2924
Constant	-3.07295	0.30962	***	0.0463
Observations	7943			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: (a) Estimates of coefficients (b) Standard errors

Table B.2. Public Benefit Use by Low-Income Workers: Year 2009

Public Benefit Use	Year 2009			
	Coeff. Est.	SE		OR
Demographic variables				
age 25 to 34	0.08183	0.12291		1.0853
age 35 to 44	-0.16226	0.13467		0.8502
age 45 to 54	-0.33213	0.15206	*	0.7174
age 55 to 64	-0.72159	0.19785	***	0.4860
female	0.90450	0.07461	***	2.4707
black	0.60059	0.11074	***	1.8232
asian	0.09756	0.24738		1.1025
race other	0.39883	0.17388	*	1.4901
hispanic	0.12273	0.12301		1.1306
no highschool grad	0.10978	0.11146		1.1160
citizen US	0.75960	0.16589	***	2.1374
immigrant	-0.02609	0.13139		0.9743
divorced	0.51437	0.15106	**	1.6726
never married	0.17665	0.13725		1.1932
separated	0.76606	0.18628	***	2.1513
Family & Household variables				
household types				
male head of hh	0.44176	0.16988	**	1.5554
female head of hh	0.92197	0.14289	***	2.5142
other types of hh	0.05219	0.17396		1.0536
dependent child	1.17336	0.11442	***	3.2329
metro	-0.03343	0.09999		0.9671
poverty up to 100	0.20296	0.08495	*	1.2250
poverty 150 to 200	-0.33661	0.08686	***	0.7142
Labor market covariates				
private employment	-0.17446	0.12064		0.8399
part time work	0.26134	0.07420	**	1.2987
union member	-0.00412	0.16303		0.9959
employee 25 to 99	0.16361	0.08502		1.1778
employee over 100	0.25055	0.09642	**	1.2847
log person earned income	0.03320	0.01939		1.0338
work limit	1.05136	0.14685	***	2.8615
unemployment rate	-0.01109	0.02234		0.9890
Private benefit through employers				
health insurance	-1.39328	0.07616	***	0.2483
retirement plans	-0.23378	0.10563	*	0.7915
State political affiliation				
democratic	0.31634	0.07816	***	1.3721
Constant	-3.42478	0.35729	***	0.0326
Observations	6777			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table B.3. Public Benefit Use by Low-Income Workers: Year 2010

Public Benefit Use	Year 2010			
	Coeff. Est.	SE		OR
Demographic variables				
age 25 to 34	0.49794	0.12806	***	1.6453
age 35 to 44	0.21310	0.13878		1.2375
age 45 to 54	0.03802	0.14651		1.0388
age 55 to 64	-0.47687	0.18702	**	0.6207
female	0.82379	0.06970	***	2.2791
black	0.68039	0.10385	***	1.9746
asian	0.99405	0.20595	***	2.7022
race other	0.37149	0.14781	**	1.4499
hispanic	0.37149	0.10749		1.0624
no highschool grad	0.19530	0.10642		1.2157
citizen US	0.50548	0.17199	**	1.6578
immigrant	-0.13256	0.15548		0.8758
divorced	0.50830	0.15058	**	1.6625
never married	0.14269	0.14031		1.1534
separated	0.52126	0.17804	**	1.6841
Family & Household variables				
household types				
male head of hh	0.47967	0.16939	**	1.6155
female head of hh	0.87495	0.13643	***	2.3988
other types of hh	-0.29365	0.17979		0.7455
dependent child	0.93212	0.10596	***	2.5399
metro	-0.16142	0.10055		0.8509
poverty up to 100	0.32608	0.09050	***	1.3855
poverty 150 to 200	-0.33937	0.09991	**	0.7122
Labor market covariates				
private employment	-0.01795	0.11575		0.9822
part time work	0.41288	0.07345	***	1.5112
union member	0.41288	0.16601		0.9598
employee 25 to 99	0.09089	0.09856		0.9598
employee over 100	0.02265	0.08827		1.0229
log person earned income	0.02222	0.02164		1.0225
work limit	0.91365	0.13238	***	2.4934
unemployment rate	0.00424	0.02277		1.0042
Private benefit through employers				
health insurance	-1.10439	0.08149	***	1.0042
State political affiliation				
democratic	0.31531	0.06695	***	1.3707
Constant	-3.32747	0.39305	***	0.0359
Observations	6522			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table B.4. Public Benefit Use by Low-Income Workers: Year 2011

Public Benefit Use	Year 2011			
	Coeff. Est.	SE		OR
Demographic variables				
age 25 to 34	0.55849	0.13300	***	1.7480
age 35 to 44	0.47644	0.15309	**	1.6103
age 45 to 54	0.21811	0.17584		1.2437
age 55 to 64	-0.10577	0.21654		0.8996
female	0.84065	0.07453	***	2.3179
black	0.59001	0.10879	***	1.8040
asian	0.58486	0.25202	*	1.7947
race other	0.15052	0.17186		1.1624
hispanic	-0.13193	0.11511		0.8764
no highschool grad	0.09562	0.10404		1.1003
citizen US	0.21802	0.20812		1.2436
immigrant	-0.32387	0.17951		0.7233
divorced	0.62365	0.15028	***	1.8657
never married	0.37908	0.14891	*	1.4609
separated	0.81546	0.19101	***	2.2602
Family & Household variables				
household types				
male head of hh	0.36471	0.17953	*	1.4401
female head of hh	0.84424	0.13066	***	2.3262
other types of hh	0.03371	0.18838		1.0343
dependent child	1.16730	0.11910	***	3.2133
metro	0.01177	0.11854		1.0118
poverty up to 100	0.12861	0.11106		1.1372
poverty 150 to 200	-0.34950	0.11370	**	0.7050
Labor market covariates				
private employment	0.01840	0.12700		1.1372
part time work	0.44118	0.08455	***	1.5545
union member	-0.13133	0.15118		0.8769
employee 25 to 99	0.09426	0.10966		1.0988
employee over 100	0.16165	0.09896		1.1755
log person earned income	-0.00898	0.02084		0.9911
work limit	0.95890	0.15370	***	2.6088
unemployment rate	-0.03553	0.02868		0.9651
Private benefit through employers				
health insurance	-1.17578	0.09904	***	0.3086
retirement plans	-0.24762	0.11228	*	0.7807
State political affiliation				
democratic	0.13854	0.08712		1.1486
Constant	0.41293	0.41293	***	0.0596
Observations	6224			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table B.5. Public Benefit Use by Low-Income Workers: Year 2012

Public Benefit Use	Year 2012			
	Coeff. Est.	SE		OR
Demographic variables				
age 25 to 34	0.16098	0.16794		1.1747
age 35 to 44	0.12745	0.19952		1.1359
age 45 to 54	-0.22319	0.20575		0.8000
age 55 to 64	-0.35168	0.23295		0.7035
female	0.95876	0.09182	***	2.6085
black	0.54789	0.10437	***	1.7296
asian	0.59604	0.24325	*	1.8149
race other	0.23800	0.26617		1.2687
hispanic	-0.07960	0.13119		0.9235
no highschool grad	0.21557	0.15228		1.2406
citizen US	0.23582	0.20594		1.2659
immigrant	-0.32629	0.19666		0.7216
divorced	0.58248	0.19218	**	1.7905
never married	0.41404	0.17948	*	1.5129
separated	0.97342	0.27700	**	2.6470
Family & Household variables				
household types				
male head of hh	0.28182	0.19513		1.3255
female head of hh	0.70590	0.16529	***	2.0257
other types of hh	0.15434	0.20960		1.1669
dependent child	1.11318	0.13063	***	3.0440
metro	0.02091	0.13597		1.0211
poverty up to 100	0.51025	0.11688	***	1.6657
poverty 150 to 200	-0.34453	0.11997	**	0.7086
Labor market covariates				
private employment	-0.08370	0.21699		0.9197
part time work	0.45547	0.09676	***	1.5769
union member	0.11359	0.25373		1.1203
employee 25 to 99	0.13881	0.11139		1.1489
employee over 100	0.22702	0.12781		1.2549
log person earned income	0.05195	0.01951	**	1.0533
work limit	1.08659	0.17140	***	2.9641
unemployment rate	0.06934	0.04472		1.0718
Private benefit through employers				
health insurance	-1.15488	0.09619	***	0.3151
State political affiliation				
democratic	0.18668	0.11797		1.2052
Constant	-4.02549	0.54493	***	0.0179
Observations	3594			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table B.6. Public Benefit Use by Low-Income Workers: Year 2008 - 2012

Public Benefit Use	Year 2008 - 2012			
	Coeff. Est.	SE		OR
Demographic variables				
age 25 to 34	0.30262	0.07155	***	1.3534
age 35 to 44	0.12098	0.08673		1.1286
age 45 to 54	-0.11400	0.09476		0.8923
age 55 to 64	-0.44491	0.12060	***	0.6409
female	0.86105	0.04144	***	2.3656
black	0.60742	0.05869	***	1.8357
asian	0.53472	0.14521	***	1.7070
race other	0.30489	0.10139	**	1.3565
hispanic	0.00000	0.06871		1.0000
no highschool grad	0.12207	0.07219		1.0000
citizen US	0.43897	0.11701	***	1.5511
immigrant	-0.16229	0.09828		0.8502
divorced	0.56356	0.09147	***	1.7569
never married	0.25681	0.08521	**	1.2928
separated	0.76259	0.10553	***	2.1438
Family & Household variables				
household types				
male head of hh	0.40047	0.10512	***	1.4925
female head of hh	0.87394	0.07010	***	2.3963
other types of hh	0.00001	0.10112		1.0000
dependent child	1.07774	0.05900	***	2.9380
metro	-0.07387	0.07169		0.9288
poverty up to 100	0.28136	0.05008	***	1.3249
poverty 150 to 200	-0.33136	0.04914	***	0.7179
Labor market covariates				
Private employment	-0.06230	0.07958		0.9396
part time work	0.36090	0.03860	***	1.4346
union member	-0.02750	0.09442		0.9729
employee 25 to 99	0.05392	0.05522		1.0554
employee over 100	0.09585	0.05198		1.1006
log person earned income	0.02067	0.01059		1.0209
work limit	1.04251	0.08103	***	2.8363
unemployment rate	-0.00581	0.01698		0.9942
Year				
2009	0.04835	0.07183		1.0495
2010	0.19626	0.07140	**	1.2168
2011	0.21375	0.07414	**	1.2383
2012	0.22656	0.06470	**	1.2543
Private benefit through employers				
health insurance	-1.22930	0.04724	***	0.2925
State political affiliation				
democratic	0.23448	0.04085	***	1.2642
Constant	-3.34656	0.21916	***	0.0352
Observations	31060			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Appendix C: Mixed Effect Model

Table C.1. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2008

Public Benefit Use	Year 2008			
	Coeff. Est.	SE		OR
Fixed Part				
Demographic variables				
age 25 to 34	0.33679	0.14092	*	1.4004
age 35 to 44	0.02572	0.15370		1.0261
age 45 to 54	-0.36734	0.17351	*	0.6926
age 55 to 64	-0.80800	0.23601	**	0.4458
female	1.24810	0.11830	***	3.4837
black	1.05069	0.14181	***	2.8596
asian	0.46124	0.27749		1.5860
race other	0.61294	0.21339	**	1.8459
hispanic	-0.04281	0.14756		0.9581
no highschool grad	0.10415	0.12230		1.1098
citizen US	0.81265	0.21301	***	2.2539
immigrant	0.08337	0.18513		1.0869
divorced	0.90113	0.20432	***	2.4624
never married	0.34406	0.17736		1.4107
separated	1.09244	0.25508	***	2.9815
Family & Household variables				
household types				
male head of hh	0.54268	0.23369	*	1.7206
female head of hh	1.59822	0.19815	***	4.9442
other types of hh	0.11391	0.21394		1.1207
dependent child	1.68085	0.15592	***	5.3701
metro	-0.32277	0.12855	*	0.7241
poverty up to 100	0.50319	0.12400	***	1.6540
poverty 150 to 200	-0.44413	0.12332	***	0.6414
Labor market covariates				
private employment	-0.27572	0.15422		0.7590
part time work	0.44069	0.09999	***	1.5538
union member	-0.28312	0.19155		0.7534
employee 25 to 99	-0.25297	0.12053	*	0.7765
employee over 100	-0.04425	0.11316		0.9567
log person earned income	0.01393	0.02607		1.0140
work limit	1.65123	0.18641	***	5.2134
unemployment rate	0.01233	0.08134		1.0124
Private benefit through employers				
health insurance	-1.91685	0.14191	***	0.1471
State political affiliation				
democratic	0.25196	0.19383		1.2865

Table C.1. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2008 (continued)

Public Benefit Use	Year 2008			
	Coeff. Est.	SE		OR
Intercept	-4.62717	0.65580	***	0.0098
Random Components				
(Random Intercept)				
State	0.21705	0.07921		0.21705
Household	3.97312	0.72107		3.97312
Observations	7943			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$
Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table C.2. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2009

Public Benefit Use	Year 2009			
	Coeff. Est.	SE		OR
Fixed Part				
Demographic variables				
age 25 to 34	0.24544	0.16284		1.2782
age 35 to 44	-0.17286	0.17720		0.8413
age 45 to 54	-0.47519	0.19631	*	0.6218
age 55 to 64	-1.08179	0.26336	***	0.3390
female	1.43788	0.13547	***	4.2118
black	1.01646	0.16488	***	2.7634
asian	-0.29810	0.32857		0.7422
race other	0.52963	0.24685	*	1.6983
hispanic	-0.05599	0.17052		0.9455
no highschool grad	0.29108	0.14137	*	1.3379
citizen US	1.14433	0.24686		3.1403
immigrant	-0.01128	0.21073		0.9888
divorced	0.65847	0.21549	**	1.9318
never married	0.23449	0.18887		1.2643
separated	1.04120	0.27413	***	2.8326
Family & Household variables				
household types				
male head of hh	0.82540	0.26407	**	2.2828
female head of hh	1.65276	0.21959	***	5.2214
other types of hh	0.34713	0.23797		1.4150
dependent child	1.88533	0.18147	***	6.5886
metro	-0.09924	0.13791		0.9055
poverty up to 100	0.35882	0.14049	**	1.4316
poverty 150 to 200	-0.55943	0.13898	***	0.5715

Table C.2. Public Benefit Use by Low-income workers: Mixed effect model - Year 2009 (continued)

Public Benefit Use	Year 2009			
	Coeff. Est.	SE		OR
Labor market covariates				
private employment	-0.43615	0.17224	**	0.6465
part time work	0.44982	0.11374	***	1.5680
union member	-0.37456	0.22268		0.6876
employee 25 to 99	0.12939	0.13203		1.1381
employee over 100	0.27597	0.13032	*	1.3178
log person earned income	0.04780	0.03003		1.0490
work limit	1.52938	0.20589	***	4.6153
unemployment rate	-0.00867	0.06304		0.9914
Private benefit through employers				
health insurance	-2.11063	0.16369	***	0.1212
retirement plans	-0.36436	0.15577	*	0.6946
State political affiliation				
democratic	0.36488	0.24251		1.4403
Intercept	-5.12606	0.78115	***	0.0059
Random Components				
(Random Intercept)				
State	0.38912	0.13658		0.38912
Household	4.41554	0.84220		4.41554
Observations	6777			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table C.3. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2010

Public Benefit Use	Year 2010			
	Coeff. Est.	SE		OR
Fixed Part				
Demographic variables				
age 25 to 34	0.76595	0.16129	***	2.1510
age 35 to 44	0.33205	0.17228		1.3938
age 45 to 54	0.07305	0.18555		1.0758
age 55 to 64	-0.66134	0.24090	**	0.5162
female	1.35054	0.12015	***	3.8595
black	1.08915	0.14887	***	2.9717
asian	1.13717	0.30228	***	3.1179
race other	0.61771	0.22496	**	1.8547
hispanic	0.02020	0.15656		1.0204
no highschool grad	0.32892	0.13337	**	1.3895
citizen US	0.65974	0.21808	**	1.9343
immigrant	-0.10975	0.19157		0.8961
divorced	0.74236	0.19961	***	2.1009
never married	0.29658	0.17691		1.3453
separated	0.72007	0.26893	***	2.0546
Family & Household variables				
household types				
male head of hh	0.86334	0.23781	***	2.3711
female head of hh	1.38278	0.19414	***	3.9860
other types of hh	-0.31543	0.22298		0.7295
dependent child	1.40404	0.15106	***	4.0716
metro	-0.26418	0.12817	*	0.7678
poverty up to 100	0.55151	0.13194	***	1.7359
poverty 150 to 200	-0.47913	0.12677	***	0.6193
Labor market covariates				
private employment	-0.11346	0.15549		0.8927
part time work	0.59019	0.10736	***	1.8043
union member	-0.17413	0.20690		0.8402
employee 25 to 99	0.10463	0.12450		1.1103
employee over 100	-0.05839	0.11637		0.9433
log person earned income	0.02165	0.02682		1.0219
work limit	1.21498	0.18659	***	3.3702
unemployment rate	-0.01590	0.05372		0.9842
Private benefit through employers				
health insurance	-1.62317	0.13488	***	0.1973
State political affiliation				
democratic	0.36329	0.18873		1.4380

Table C.3. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2010 (continued)

Public Benefit Use	Year 2010 Coeff. Est.	SE		OR
Intercept	-4.51396	0.69013	***	0.0110
Random Components				
(Random Intercept)				
State	0.18996	0.08061		0.18996
Household	3.55697	0.61562		3.55697
Observations	6522			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$
Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table C.4. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2011

Public Benefit Use	Year 2011 Coeff. Est.	SE		OR
Fixed Part				
Demographic variables				
age 25 to 34	0.88128	0.16122	***	2.4140
age 35 to 44	0.64595	0.17160	***	1.9078
age 45 to 54	0.24446	0.18476		1.2769
age 55 to 64	-0.23729	0.22592		0.7888
female	1.20483	0.11634	***	3.3362
black	0.97428	0.14531	***	2.6493
asian	0.54937	0.28498		1.7322
race other	0.05782	0.23485		1.0595
hispanic	-0.09454	0.15038		0.9098
no highschool grad	0.37464	0.13467	**	1.4545
citizen US	0.39407	0.22023		1.4830
immigrant	-0.38919	0.19813	*	0.6776
divorced	0.80440	0.19248	***	2.2354
never married	0.36016	0.17343	*	1.4336
separated	0.83977	0.25700	**	2.3158
Family & Household variables				
household types				
male head of hh	0.77643	0.23386	**	2.1737
female head of hh	1.30984	0.18654	***	3.7056
other types of hh	0.15898	0.21734		1.1723
dependent child	1.53591	0.14995	***	4.6455
metro	-0.07745	0.12507		0.9255
poverty up to 100	0.19329	0.12361		1.2132
poverty 150 to 200	-0.50069	0.12305	***	0.6061

Table C.4. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2011 (continued)

Public Benefit Use	Year 2011			
	Coeff. Est.	SE		OR
Labor market covariates				
private employment	-0.22603	0.15654		0.7977
part time work	0.59132	0.10464	***	1.8064
union member	-0.35524	0.21292		0.7010
employee 25 to 99	0.14916	0.12083		1.1609
employee over 100	0.18616	0.11546		1.2046
log person earned income	-0.00624	0.02666		0.9938
work limit	1.33177	0.18717	***	3.7877
unemployment rate	-0.01575	0.05870		0.9844
Private benefit through employers				
health insurance	-1.61013	0.13600	***	0.1999
retirement plans	-0.39052	0.13371	**	0.6767
State political affiliation				
democratic	0.28027	0.18930		1.3235
Intercept	-4.09586	0.65956	***	0.0166
Random Components (Random Intercept)				
State	0.19345	0.07198		0.19345
Household	2.74134	0.54676		2.74134
Observations	6224			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.

Table C.5. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2012

Public Benefit Use	Year 2012			
	Coeff. Est.	SE		OR
Fixed Part				
Demographic variables				
age 25 to 34	0.18064	0.19791		1.1980
age 35 to 44	0.02839	0.21266		1.0288
age 45 to 54	-0.38823	0.23162		0.6783
age 55 to 64	-0.71619	0.27877	**	0.4886
female	1.35957	0.15985	***	3.8945
black	0.71554	0.18223	***	2.0453
asian	0.45424	0.34093		1.5750
race other	0.25386	0.29928		1.2890
hispanic	-0.27593	0.18541		0.7589
no highschool grad	0.31670	0.16571		1.3726
citizen US	0.39381	0.26454		1.4826
immigrant	-0.18135	0.23968		0.8341
divorced	0.60894	0.24714	*	1.8385
never married	0.39782	0.21589		1.4886
separated	1.01115	0.33754	**	2.7488
Family & Household variables				
household types				
male head of hh	0.63101	0.28721	*	1.8795
female head of hh	1.12927	0.22609	***	3.0934
other types of hh	0.38227	0.26251		1.4656
dependent child	1.51807	0.19583	***	4.5634
metro	-0.01279	0.15737		0.9873
poverty up to 100	0.68290	0.16167	***	1.9796
poverty 150 to 200	-0.36699	0.15739	*	0.6928
Labor market covariates				
private employment	-0.20316	0.23810		0.8161
part time work	0.50802	0.13215	***	1.6620
union member	0.24788	0.31751		1.2813
employee 25 to 99	0.21148	0.13981		1.2355
employee over 100	0.19537	0.15603		1.2158
log person earned income	0.06996	0.03433	*	1.0725
work limit	1.38791	0.23563	***	4.0065
unemployment rate	0.15220	0.07515	*	1.1644
Private benefit through employers				
health insurance	-1.63930	0.18786	***	0.1941
State political affiliation				
democratic	0.18780	0.20590		1.2066

Table C.5. Public Benefit Use by Low-Income Workers: Mixed Effect Model - Year 2012 (continued)

Public Benefit Use	Year 2012			
	Coeff. Est.	SE		OR
Intercept	-5.72140	0.85323	***	0.0033
Variances (Random Intercept)				
State	0.16743	0.07733		0.16743
Household	2.59098	0.80490		2.59098
Observations	3594			

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Note: A predictor - retirement/pension plans is available in the data for 2009 and 2011.