

Global Financial Crisis and Job Satisfaction of Atypical Workers: the case of Taiwan

Bih-Hearn Virginia Lee¹

Lih-Rong Lillian Wang²

David Fu-Keung Ip³

Abstract

Since September 2008, global and regional employment markets have been seriously undermined as a result of the global financial crisis. This article analyzes how the Taiwanese labour market, particularly the market for atypical labour, has been affected by the current global financial crisis and examines whether workers have experienced a significant difference in their level of job satisfaction as a result of the crisis. The path analysis for the ‘gap in job satisfaction’ (GiJS) before and after the global financial crisis shows that there are significant differences in the GiJS among respondents, which can be attributed to several factors: most importantly, type of

¹ Professor, Graduate Institute of National Development, College of Social Science, and Director of Population and Gender Studies Center, National Taiwan University (lbh@ntu.edu.tw)

² Professor, Department of Social Work, and Director of Social Policy Research Center, College of Social Science, National Taiwan University (wanglr@ntu.edu.tw)

³ Associate Professor, Department of Applied Social Sciences, and Program Director, Master of Arts in Social Policy and Social Development, The Hong Kong Polytechnic University (ssdavid@polyu.edu.hk)

work, followed by educational level, and, finally, monthly income. Gender has less effect on the GiJS than other variables; however, it does affect the GiJS insofar as it influences type of work and monthly income. As a result of the global financial crisis, atypical workers, workers with little education, and poorly paid workers have significantly lower job satisfaction than workers engaged in typical employment, well-educated workers, and well-paid workers. The three disadvantaged groups have experienced a greater reduction of job satisfaction than the other groups.

Keywords: global financial crisis, atypical work, gap in job satisfaction (GiJS), case of Taiwan

Introduction

Since September 2008, the global and regional employment markets have been seriously undermined as a result of the global financial crisis. The impact of the crisis has not been limited to the financial sector but has spread to all sectors of the economy. The financial and economic crisis led to a job crisis that has eroded labour market institutions and social safety nets (ILO, 2009a, 2009b; OECD, 2009). By August 2009, Australia, Germany, France, and Japan showed some economic growth and a few emerging economies, including China, India, and Brazil, returned to high growth rates. Most countries, however, experienced a serious economic downturn and a sharp increase in unemployment. According to the evidence of past economic downturns, there is usually a four to five year lag in employment after the beginning of an economic recovery (OECD, 2009).

This study investigates how the Taiwanese labour market, particularly the market for atypical labour, has been affected by the current global financial crisis and examines whether workers have experienced a significant difference in their job satisfaction as a result of the crisis. Taiwan has not been exempt from the current socio-economic hardships; in fact, it has experienced the most dramatic economic downturn among

the “four little tigers” of Asia (Hong Kong, Singapore, Korea, and Taiwan). Since 2008, Taiwan experienced an economic decline of -8.6% and a rise in the unemployment rate to 4.7% in the fourth quarter of 2008. This worsened in 2009, with declines of -10.1% and -7.5% and unemployment rates of 5.6% and 5.8% in the first and second quarters, respectively. By August 2009, the unemployment rate had reached a record high of 6.1%.

Our analysis is based upon the Second-Wave Social Quality Survey conducted in Taiwan in August 2009. After a review of the literature relating to issues of atypical employment and job satisfaction before and after the 2008 global financial crisis, we will focus on the situation in Taiwan. Our presentation of the research design is followed by statistical analyses. In conclusion, we will summarize the research and examine the implications of our findings for social policy.

Atypical Employment and Job Satisfaction prior to the 2008 Global Financial Crisis

In most European countries, atypical employment has increased since the 1990s due to deregulation and the subsequent emergence of a flexible labour market. Regini (2000) summarizes the main changes in the regulatory frameworks of the European countries as follows: a reduction of constraints on temporary and fixed-term contracts

either through legislation or collective bargaining; the decentralization of wage-fixing, albeit within the framework of a high level of wage coordination; increasing flexibility in working time and company practices, as a result of the decentralization of negotiations affecting working conditions; and the introduction of measures to limit the degree to which social services act as a disincentive to employment, such as restrictions to easy access of unemployment and related benefits, and links between unemployment benefits administration and active labour market policies.

The atypical employment that was fostered in Europe during the 1990s took various forms. According to Keller and Seifert (2005), there are five types of atypical employment: part-time work, petty (or marginal part-time) employment, fixed-term employment, temporary and agency work, and new forms of self-employment. However, according to Regini (2000) and De Grip, Hoevenberg, and Willems (1997), there are three main groups of atypical workers: part-time workers, fixed-term contract workers, and the self-employed. The types of atypical employment vary across Europe. De Grip, Hoevenberg, and Willems (1997) note that in 1995 Spain and the Netherlands had the highest proportion of flexible employment. In Spain, this was largely due to increases in temporary employment, whereas in the Netherlands it was due to increases in part-time employment. France also showed a substantial increase

in flexible employment, due to the growth of both part-time and temporary jobs, but its ratio of flexible-to-total employment was still below the EU average.

Reforms that promote deregulation and flexibility have the unwelcome consequence of increasing employment insecurity. There are opposing views regarding the desirability of atypical jobs: while some considered them bridges to better full-time jobs, others believe they create low-income traps that are difficult to escape. Research shows that the degree of insecurity engendered by atypical employment varies across countries, and that it depends on labour markets and welfare institutions. According to Auer and Cazes (2003), some neo-liberal regimes, including the United States and Britain, have high levels of flexibility (that is, low levels of employment protection legislation) and low levels of social protection. Some European corporatist regimes, including France and Germany, have low levels of flexibility (that is, high levels of employment protection legislation) and high levels of social protection. Nordic social democratic regimes such as Denmark and Sweden have both high levels of flexibility (due, again, to low levels of employment protection legislation) and high levels of social protection. Conversely, a number of Asian state corporatist or developmentalist regimes, including Japan, Korea, and Taiwan, have both low levels of flexibility (as a result of high levels of employment protection legislation) and low levels of social

protection. The relationships between employment protection legislation and the social protection offered by labour policies for Denmark, France, Japan, and the United States are shown in Table 1.

Table 1. Employment protection legislation and social protection through labour market policies for Denmark, France, Japan and the United States

	High level of social protection	Low level of social protection
High level of EPL	France	Japan
Low level of EPL	Denmark	United States

Source: Auer and Cazes, 2003: 12.

In the case of the United Kingdom, Booth, Francesconi, and Frank (2002) report that about 7% of male employees and 10% of female employees are in temporary jobs. Their research confirms the popular perception that temporary jobs are generally not as desirable as permanent employment: temporary workers have lower levels of job satisfaction, receive less training, and are less well-paid. Their study did, however, find evidence that fixed-term contracts are often stepping stones to permanent work. Natti's (1995) study of Scandinavian countries shows that, in most cases, part-time work is a bridge rather than a trap. Natti found that in Sweden and Norway the gap

between part-time and full-time work has narrowed, reflecting the normalization of part-time work in these countries. In Finland, however, the situation of part-time workers is still more precarious than that of full-time workers.

The current situation in the Netherlands reflects the implementation of measures to address unemployment. Barieri (2007: 5) observes,

During the 1980s and 1990s, the Netherlands pursued an employment intensive strategy that consisted of increased wage flexibility during collective bargaining and rapid intensification of part-time work (33% of all jobs in the Netherlands were part-time in 2001; OECD 2003), implemented through negotiated arrangements between unions and firms that reduced the wage and pension penalty for working part-time (Schmid 2002). During the 1990s, the Netherlands raised its employment-to-population ratio by more than 10 percentage points to reach 73.2% by 2002 (81.5% for men, 64.7% for women), which again compares very favourably to France.

The reforms in the Netherlands operated on two fronts, as shown in Figure 1: the introduction of radical, neo-liberal measures leading to labour market deregulation was balanced by an increase in universal social protection.

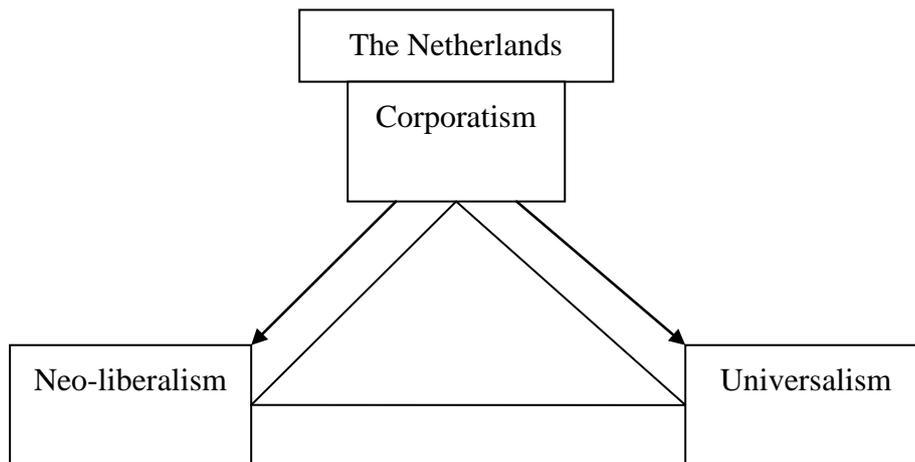


Figure 1. Approaches of reforms of the corporatist Dutch labour market

The Netherlands offers an example of how to maintain a high employment rate during periods of economic hardship. During economic crises, social protection is crucial for disadvantaged workers, including atypical workers, in the labour market. The level of social protection has a direct effect on the job satisfaction of atypical workers. As Kaiser (2007) notes, job satisfaction is an important indicator of the well-being of the economy and society as a whole. He argues that the job satisfaction of atypical workers is affected by both individual, subjective attitudes and the institutional arrangements of welfare states.

Nonetheless, Kaiser (2007) remains critical of the situation in the Netherlands: as a result of its extensive part-time market, most women are obliged to accept part-time

jobs, which have lower wages and few opportunities for advancement (Giovanni and Hassink 2005; Prowse 2005). He observes that in Denmark and Finland the full-time employment opportunities for women and men are relatively equal, though Danish female workers are less satisfied than their male counterparts with the number of working hours. Kaiser (2007) suggests that this discrepancy will be reduced as a result of the ongoing introduction of institutional measures that promote equal opportunities for men and women. He concludes,

In general, objective employment conditions and individual estimation of the job satisfaction levels are mutually interdependent. The more restrictive the labour market access is for women, the more likely a gender-job satisfaction paradox is to emerge in that country. ...there is no universal “female” attitude towards employment that arises intrinsically or even biologically. On the contrary, female labour market participation and gender-job satisfaction differences are due to different employment opportunities that are offered by different welfare state and labour market regimes and their inherent institutions. It is here where appropriate labour market interventions can be most powerful. (Kaiser 2007: 90–91)

With regard to gender wage differentials and the preponderance of part-time jobs for women, Bowlus and Grogan (2008) argue that in the past ten years, the governments

of several industrialized countries have introduced legislation aimed at improving the status of part-time work, in order to encourage women's participation in the labour force and reduce wage differentials based on gender. The directive of the European Union (EU) regarding part-time work was introduced in 1997, and, as a result, the UK adopted the Prevention of Less Favourable Treatment rules for part-time workers in 2000. This legislation mandates that, on a pro rata basis, part-time workers receive the same hourly rates of pay and the same entitlements to pensions, leave, sick pay, and training as full-time workers. Bowlus and Grogan's study shows that labour status (full- or part-time) plays a role in determining gender wage differentials according to level of education. The significance of wage differences varies by education level and hours of work. In the case of university-educated workers, productivity differences account for the wage differential between full-time male and full-time female workers. Bowlus and Grogan found, however, that university-educated females working part-time have the highest productivity levels but still receive lower wages than full-time male and female workers.

Vandenberg (2008) surveyed the employment policies of six Asian countries and found distinct employment patterns. In India and Sri Lanka, employers are supplied with a flexible workforce but workers have no employment security. China and Korea

have reduced restrictions on retrenchment while introducing unemployment insurance and other social support measures. Singapore and Malaysia offer flexible systems with strong activation policies but do not offer workers employment protection or provide welfare programs. In Korea, non-regular employment, mainly in the form of fixed-term contracts and part-time work, allows employers to maximize flexibility and reduce costs. The Act Concerning the Protection of Fixed Term and Part-time Employees was introduced by the Korean government in July 2007: it mandates equal treatment for regular and non-regular workers.

Hausermann and Palier (2008) further argue that the transition to the twenty-first century's post-industrial economy has created a new context for labour. There have been multiple pressures on post-industrial labour markets as a result of globalization, de-industrialization, and demographic changes. The tension between labour markets and industrial welfare states has grown as a result of the massive unemployment beginning in the 1970s, the difficulty of entering the labour market, the spread of atypical/precarious work, rising income inequalities, and the increased participation of women in the labour force. Today, in the aftermath of the recent global financial crisis, global and regional labour markets have experienced the biggest upheaval in fifty years.

Impact of the Global Financial Crisis on Employment

The ILO (2009a, 2009b) and OECD (2009) clearly indicate that the world economic crisis has rapidly led to a global job crisis, which is eroding social safety nets, poverty alleviation strategies, and labour market institutions. The development efforts of decades have been endangered as the number of unemployed, the working poor, and those in vulnerable employment grows. The ILO (2009a) argues that the evidence of past crises indicates that, even after the return of economic growth, there is a lag of four to five years before employment reaches pre-crisis levels, and there was already a significant work deficit before the crisis. The ILO (2009b) also suggests that new job legislation is required to stimulate the economy, sustain working families, and tackle the new job crisis: such legislation would be employment-oriented and would focus particularly on the plight of those who are most vulnerable to the adverse effects of the crisis.

According to the OECD's *Employment Outlook: Tackling the Jobs Crisis* (2009), the world economy is facing the worst recession since the end of World War II, and unemployment in many countries has risen to unprecedented heights. Many

governments have implemented measures to strengthen the safety nets for the unemployed and working poor, as well as programs intended to increase potential workers' employability and facilitate their reintegration into the labour market. In some OECD countries, however, unemployment benefits fail to provide security because many of the newly unemployed had previously worked in atypical jobs and thus fail to satisfy the eligibility criteria. Employment and social policies in the wake of the job crisis must have two priorities. First, they should ensure that financial support for those who have lost their jobs or are insufficiently paid is adequate and accessible. Second, they should strengthen labour market policies that provide job seekers with re-employment assistance. The risk of working poverty is primarily the result of insufficient working hours, not low hourly wages.

The OECD (2009) also suggests that the implementation of such measures must be modified during periods of deep recession. The jobs that are created during recessions are often intended to exploit new market opportunities, and employment services can play a decisive role in helping to fill these vacancies quickly. Second, the OECD suggests a shift of focus and resources: the "work-first" approach should be replaced by a "train-first" approach for those at high risk of long-term unemployment. The global economic crisis has accelerating structural adjustments in the job market, and

training can play an important role in ensuring that workers are equipped with the appropriate skills for emerging jobs. Third, the OECD recommends that any working schemes, hiring subsidies, or public-sector job creation programs that are implemented should be temporary to minimize deadweight costs and to ensure that participants are motivated to find regular jobs once the recovery gathers pace.

Wohlmuth (2009) provides a more country-specific account of the global financial crisis. After examining two leading exporters, Japan and Germany, he argues that these countries need not only to reform their labour, employment, and social security policies but also to establish quick and well-planned responses to crises, so that they can counter the new forces of globalization and maintain social solidarity. He maintains that simply relying on flexible labour markets and reactive reforms is no longer appropriate.

The case of Holland, mentioned earlier, elucidates the ways in which macro-institutional arrangements can alleviate the negative impacts of global financial crises. According to the OECD *Employment Outlook* (2009), in June 2009, the Netherlands had the lowest unemployment rate (3.3%) among the thirty OECD countries. Moreover, it had the third-highest employment rates at (76.1%), after

Iceland (84.2%) and Denmark (78.4%). The Netherlands also had the highest proportion of atypical-to-total employment—36.1% in 2008. The country combines a high level of social protection with the lowest level of employment protection and highest level of labour flexibility among the European continental countries. Even in this time of economic crisis the Netherlands still has high employment and low unemployment compared to other countries worldwide.

The IMF (2009) indicates that in Asia, during the 2008-2009 economic downturn, businesses have reduced their investment and slashed production but have so far attempted to preserve employment and limited redundancies to part-time workers. However, the longer the demand shock persists, the more likely it is that firms will be obliged to restructure. The region may experience a wave of consolidation through mergers and acquisitions. Given the historical relationships between industrial output and employment growth in certain emerging Asian economies, it is possible that the current downturn will push the employment rate down by four more percentage points over the next six months—an employment contraction resembling that of the Asian financial crisis, as shown in Figure 2.

Unit: Year, %

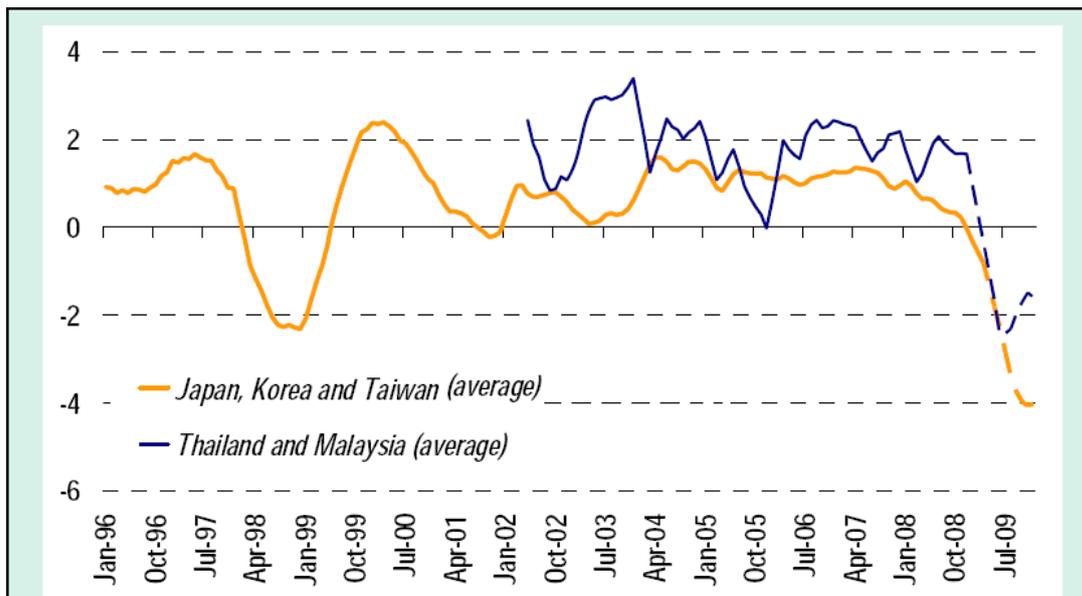


Figure 2. Employment Growth Rate of Selected Asian Countries

Source: IMF (2009): 12.

As Figure 3 shows, the unemployment rate grew in many Asian economies in the period between 2007 and 2009. According to the Taiwanese Directorate-General of Budget, Accounting, and Statistics, among the Asian “four little tigers,” Taiwan experienced the deepest economic downturn in the second quarter of 2009, at -7.5%, compared to Hong Kong at -3.8%, Singapore at -3.5%, and Korea at -2.5%. Taiwan’s unemployment rate reached 6.1% in August 2009, compared to 3.8% in Korea during the same month. The number of unemployed in Taiwan reached 927,000 in August 2009. To understand this situation, it is necessary to look more closely at the nature of employment and atypical work before and after the 2008 global financial crisis in

Taiwan.

Unit: %

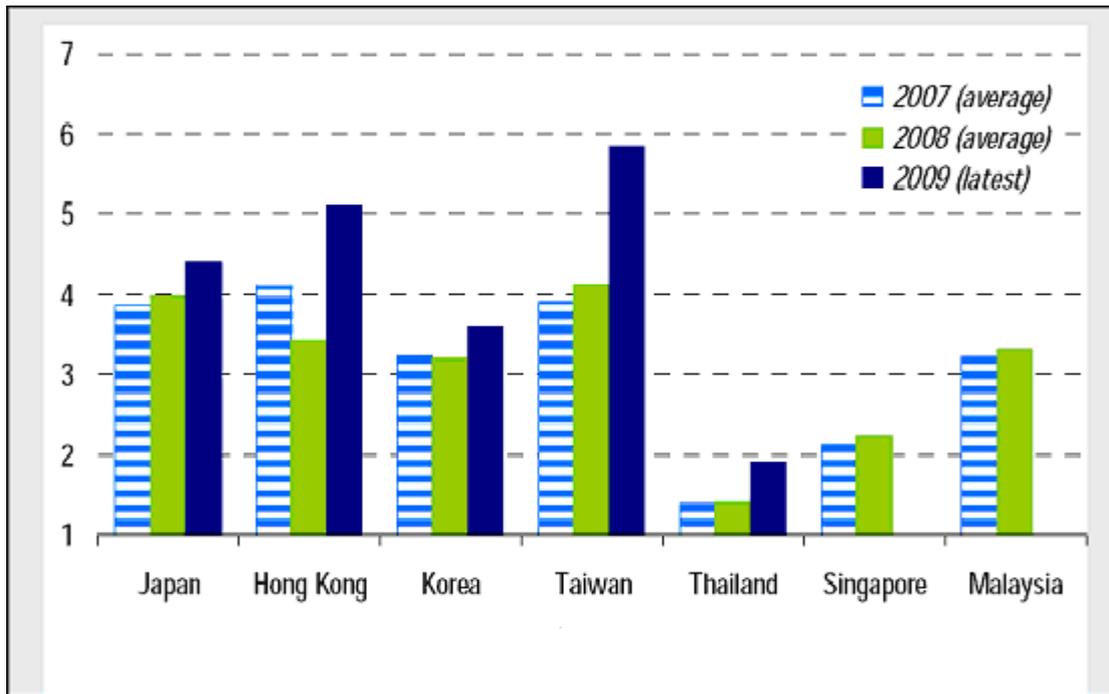


Figure 3. Unemployment Rate of Selected Asian Countries

Source: Modified from IMF (2009): 12.

The 2008 Global Financial Crisis and Employment and Atypical Work in Taiwan

Taiwan's heavily export-oriented economy has been seriously undermined by the global demand shock and subsequent export slowdown occasioned by the financial crisis of 2008. According to the Taiwanese Council for Economic Planning and Development (CEPD), the total amount of Taiwan's exports from January to

September 2009 was 30% less than that during the same period of the previous year. Moreover, the second quarter of 2009 was the fourth consecutive quarter that the Taiwanese economy experienced recession. The real average income during the period from January to July 2009 was 6.5% less than that of the equivalent period in the previous year and represented a 13-year low. This decrease in the real average income was greatly due to forced unpaid leave, decreased working hours, and shifts to atypical employment, including part-time and temporary work, after the global financial crisis, and was exacerbated by the larger forces of globalization and the business downturn.

The record-high unemployment rate in Taiwan in August 2009 was the result of a combination of factors: the consequences of the global financial crisis and of an industrial transformation that began in the late 1980s when Taiwan deregulated its markets and opened trade with other countries, especially with Chinese Mainland.

The financial crisis has only added to the complexity and severity of the employment problems in Taiwan: not only there is cyclical unemployment, but also ongoing structural unemployment. As early as October 2008, the Taiwanese government had responded to ongoing labour problems by implementing work-pay subsidy measures to prevent low-income working families from descending into poverty, to protect their

basic standard of life, and to ensure an income necessary to meet their material needs.

Since that time, the Taiwanese government has implemented further employment promotion measures: the Getting to Work Immediately program, the 2008-2009 short-term employment promotion measures, the Program for Strengthening Local Construction to Increase Domestic Demand, the project to increase investment in public works, and the Middle- and Long-Term Employment Promotion program, 2009-2012 (this last represents an effort to promote an active labour market). Starting in May 2009, the Taiwanese government extended the maximum duration of unemployment benefits from six months to nine months for workers middle-aged and older and for disabled workers. However, most of these measures were short-term, offering from six months to one year of support, and most atypical workers are excluded from employment-related social protection.

Immediately after the outbreak of the global financial crisis in September 2008, many full-time workers in Taiwan were forced to shift to part-time jobs. This phenomenon led to a rise in the percentage of part-time workers among all employees during September to December 2008. As shown in Table 2, there was an increase from 8.98% (934,000 part-time workers) in September to 17.16% (1,777,000 part-time workers) in December, and, during the same period, there was a dramatic decrease in

the percentage of full-time workers, from 90.95% (9,417,000 full-time workers) in September to 81.84% (8,484,000 full-time workers) in December. The percentage of part-time workers among all employed persons reached its peak in January 2009, at 17.19%, and since then it has gradually decreased. By September 2009, it had reached 10.71%, but this figure is still high compared to the 2007 figure of 8.0%. These statistics reveal that atypical workers in Taiwan have been adversely affected by the current economic downturn: their employment situation has become very vulnerable and insecure. In order to determine the shifts in work status and income changes after the 2008 global financial crisis, we will analyze data from the Second-Wave Social Quality Survey conducted in August 2009 in Taiwan.

Table 2. Part-time workers and full-time workers as % of total employed persons in Taiwan, 2008–2009

Units: 1,000 persons ; %

	Part-time workers* (a)	Full-time workers (b)	Total employed persons (c)	(a)/(c)	(b)/(c)	Unemployment rate	
2008/04	875	9,488	10,395	8.42	91.27	3.81	Q2: 3.87
2008/05	903	9,467	10,413	8.67	90.92	3.84	
2008/06	877	9,488	10,414	8.42	91.11	3.95	
2008/07	1,472	8,738	10,436	14.11	83.73	4.06	
2008/08	1,006	9,232	10,464	9.61	88.23	4.14	
2008/09	934	9,417	10,405	8.98	90.50	4.27	Q3: 4.16
2008/10	945	9,437	10,424	9.07	90.53	4.37	
2008/11	1,222	9,135	10,410	11.74	87.75	4.64	

2008/12	1,777	8,484	10,354	17.16	81.84	5.03	Q4: 4.68
2009/01	1,771	8,444	10,303	17.19	81.96	5.31	
2009/02	1,750	8,409	10,224	17.12	82.25	5.75	
2009/03	1,564	8,600	10,220	15.30	84.15	5.81	Q1: 5.62
2009/04	1,435	8,742	10,226	14.03	85.49	5.76	
2009/05	1,424	8,759	10,241	13.90	85.53	5.82	
2009/06	1,235	8,952	10,244	12.06	87.39	5.94	Q2: 5.84
2009/07	1,283	8,763	10,258	12.51	85.43	6.07	
2009/08	1,404	8,646	10,285	13.65	84.06	6.13	
2009/09	1,101	9,110	10,278	10.71	88.64	6.04	Q3: 6.08

Source: Accounting and Statistics, Executive Yuan, R.O.C., 2008–2009.

<http://eng.dgbas.gov.tw/lp.asp?ctNode=2054&CtUnit=1016&BaseDSD=7>

*Defined as less than 40 working hours a week.

Research Framework

This study examines the effects of gender and education on the type of work, monthly income, and job satisfaction between typical and atypical workers. Figure 4 summarizes the research framework of this study.

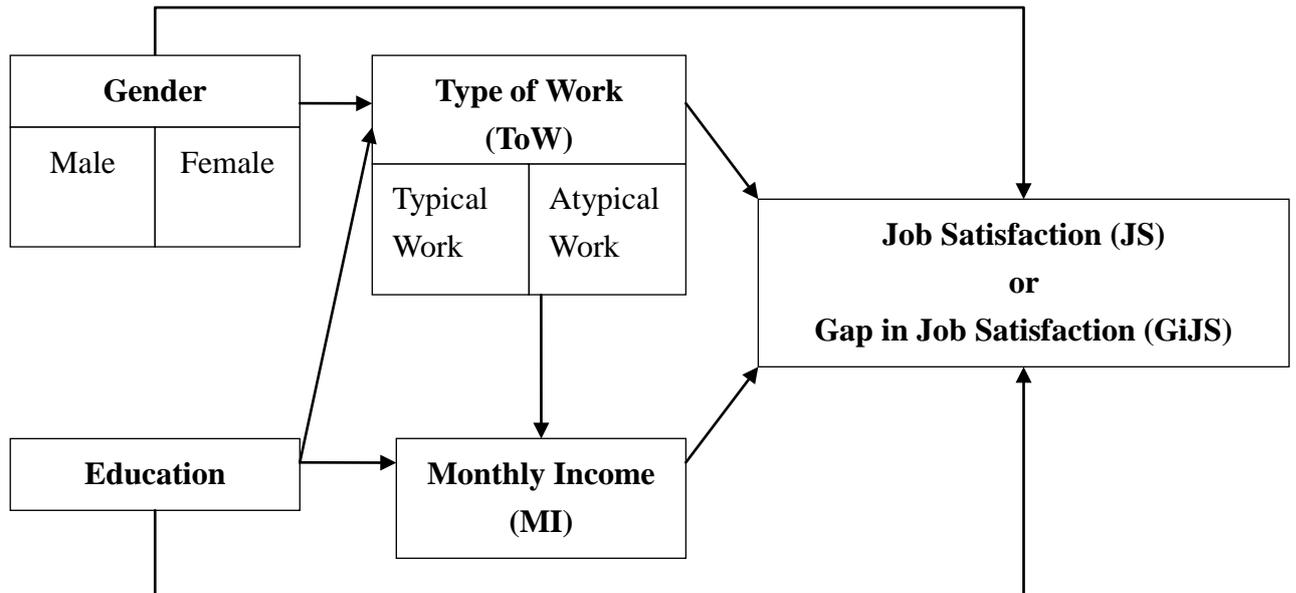


Figure 4. Research Framework

Definitions of Variables

The definitions of our variables are as follows:

1. **Gender:** Our survey data differentiates male and female.
2. **Education:** In analyses of Chi-square tests and ANOVA, the variable of education is differentiated as follows: high level (university), intermediate level (senior high school and vocational school), and low level (below junior high school). In path model analysis, it is defined according to years of education.
3. **Type of work (ToW):** In ANOVA, this variable is classified as follows: typical workers (full-time workers) and atypical workers (part-time or temporary workers and daily workers). In path model analysis, this variable is recoded,

according to level of job stability, into a postulated continuous variable, with scores of 1 (daily workers), 3 (part-time or temporary workers), and 5 (full-time workers). The higher a job's stability, the higher its score.

4. Monthly income (MI): In path model analysis, this variable refers to the respondents' statements of monthly income.

5. Job satisfaction (JS) and gap in job satisfaction (GiJS): We differentiated seven components in the variable of job satisfaction: income, employment stability, work content, work environment, working time, possibility of individual development, and communication and interpersonal relationships. The overall score for job satisfaction is the average of the scores for these seven components.

To determine the gap in job satisfaction (GiJS), we used the information gathered from respondents participated in the Second-Wave Social Quality Survey (August 2009) about their present job satisfaction with regard to the seven components, as well as their job satisfaction one year before (around August 2008) in relation to the seven components. The gap in job satisfaction before and after the global financial crisis is measured by the differences between the two average scores of 2008 and 2009.

Research Hypotheses

Using our research framework, we developed the following hypotheses:

1. The variables of gender and education influence type of work, monthly income, and job satisfaction. It was hypothesized that males are more likely to have typical work, higher monthly incomes, and higher job satisfaction than females, and that respondents with higher educational levels are more likely to have typical work, higher monthly incomes, and higher job satisfaction than those with lower educational levels.
2. The variable of type of work influences monthly income and job satisfaction. Typical workers tend to have higher monthly incomes and greater job satisfaction than atypical workers.
3. The variable of monthly income influences job satisfaction. Respondents with higher monthly incomes tend to have higher job satisfaction than those with lower monthly incomes.
4. Lastly, job satisfaction is significantly related to individual background (gender and level of education), type of work, and monthly income. The gap in job satisfaction before and after the global financial crisis is similarly significantly related to individual background, type of work, and monthly income.

Data Source and Methods

The empirical data used in this study is from the Second-Wave Social Quality Survey (2009) processed by the Gallup Market Research Corp., Taiwan, and commissioned by the Social Policy Research Center, College of Social Science, National Taiwan University. The research was conducted in Taiwan, including 23 cities and counties (excluding Kinmen County and Lienchiang County). The data analysis was processed with the SPSS and AMOS, and included descriptive statistics, cross-table, Chi-square test, one-way ANOVA, and path analysis with observed variables (PA-OV).

Research Results and Analysis

Description of Samples

There were 1,221 subjects in our sample drawn from the Second-Wave Social Quality Survey. The sample was divided as follows: by gender, 607 males (49.7%) and 614 females (50.3%); by educational level, 191 respondents with a low level (15.6%), 613 respondents with an intermediate level (50.2%), and 417 respondents with a high level (34.2%); by age, 363 respondents 20 to 34 years old (29.7%), 374 respondents 35 to 49 years old (30.7%), and 483 respondents above 50 years old (39.6%); by type of work, 721 respondents with typical work (88.0%, males accounting for 46.9% and females for 41.2%), and 98 respondents with atypical work (12.0%, males accounting

for 5.5% and females for 6.5%). We found that respondents with low and high educational levels (i.e., junior high school or below and university) are more likely to have atypical work than those with intermediate levels (senior high school and vocational school).

With regard to respondents' monthly income, on average, men's monthly income is NTD 41,912, while women earn only 76% of that amount or NTD 31,853. The monthly income of male typical workers is NTD 44,470, while female typical workers earn 77.3% of that amount or NTD 34,380. The monthly income of male atypical workers is NTD 20,255, while female atypical workers earn NTD 15,975 (78.9% of the income of male atypical workers and 35.9% of that of male typical workers). In total, the average monthly income of the atypical workers is NTD 17,940, which is only slightly higher than our basic wage (NTD 17,280) and equivalent to only 45.1% of the average monthly income of standard full-time workers (NTD 39,764).

When atypical workers were divided according to educational level, we found that only 14 had low levels of education and they earned, on average, a monthly income of NTD 26,071. Atypical workers with an intermediate level of education only earn NTD 19,210, while those with a high level of education earned the least (NTD 17,065). It

may be that those with higher levels of education were preparing for future studies or exams and therefore had very few working hours. Our data also show that in 2009 the reduction of the number of atypical workers with low levels of education may have led to a shortage of atypical blue-collar workers, who were thus in a position to earn much more than those atypical workers with medium and high educational levels.

With regards to job satisfaction, on average, men scored 3.21 and women scored 3.18. Typical workers had a job satisfaction score of 3.22, and atypical workers, of 3.02. Male typical workers had the highest job satisfaction (3.23), while male atypical workers had a job satisfaction score of 3.06; female typical workers scored 3.21, and female atypical workers had the lowest score (3.02).

Our calculation of the gap in job satisfaction (GiJS) before and after the global financial crisis (that is, the difference in the job satisfaction scores of August 2008 and August 2009) showed that male workers had an average GiJS score of -0.13, and female workers, -0.19. Typical workers had a GiJS score of -0.1, considerably less than the score for atypical workers, which was -0.58. Female atypical workers experienced the greatest GiJS score (-0.79), while the score for male atypical workers was -0.33. Male typical workers' GiJS score was -0.11, and female typical workers'

was -0.09.

Research Findings 1: General Tests of Chi-square, ANOVA, and Correlation

Type of Work

The 2009 survey data were first analyzed using the Chi-square test of independence for gender and type of work. The results, shown in Table 3, indicate that there is no significant relation between gender and type of work ($p = .172$). When we conducted the Chi-square test of independence for education and type of work, the results showed that there is a significant relation between education and type of work ($p = .004^{**}$). We noted that respondents with an intermediate level of education are more likely to have typical work (49.6%) than those with a high level (30.8%) or those with low level (7.8%). The test also showed that respondents with high educational levels are more likely to be engaged in atypical work (5.6%) than those with intermediate educational levels (4.6%) or those with low educational levels (1.7%).

Table 3. Differences in type of work by gender and education (N = 819)

Variable	Classification	Typical work (%)	Atypical work (%)	χ^2
Gender	1 Male	384 (46.9)	45 (5.5)	1.864
	2 Female	337 (41.1)	53 (6.5)	
Education	1 High	252 (30.8)	46 (5.6)	11.125**
	2 Intermediate	406 (49.6)	38 (4.6)	
	3 Low	63 (7.8)	14 (1.7)	

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

Monthly Income

Our first step was to perform a one-way ANOVA for gender and monthly income.

The results, shown in Table 4, indicate that there is a mean difference in monthly income between men and women ($p < .001^{***}$). Men, on average, tend to earn a higher monthly income (NTD 41,912) than women (NTD 31,853). We then performed a one-way ANOVA for education and monthly income. The results show a mean difference in monthly income among three groups by education ($p = .03^*$).

(According to post-hoc analysis, people with higher educational levels tend to have higher incomes.) We also performed a one-way ANOVA to understand the relation between type of work and monthly income. The results of the SPSS show that there is a mean difference of monthly income between typical and atypical workers ($p < .001^{***}$). Typical workers tend to earn more (NTD 39,764 per month) than atypical workers (NTD 17,940 per month).

Table 4. Differences in monthly income by gender, education, and type of work (N = 819)

Variable	Between Groups			
	SS	df	M. Square	F
Gender	2049174836	1	2.049E	19.878***
Education	4763880538	2	2381940269	2.265*
ToW	41041102898	1	4.104E	40.817***

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

Job Satisfaction

After performing a one-way ANOVA, we analyzed the relationship between gender and job satisfaction. The results, shown in Table 5, indicate that there is a mean difference in job satisfaction between men and women ($p = .006^{**}$). Men, on average, tend to have higher job satisfaction. We then analyzed the relation between education and job satisfaction by one-way ANOVA. The results show a significant mean difference in job satisfaction according to the three levels of education ($p < .001^{***}$). (Post-hoc analysis indicated that people with higher educational levels tend to have higher job satisfaction.) The results also show that there is a mean difference in job satisfaction between typical workers and atypical workers ($p = .003^{**}$). Typical workers tend to have higher job satisfaction (with a mean score of 3.22 out of a

possible 5) than atypical workers (with a mean score of 3.04).

Table 5. Differences in job satisfaction by gender, education, and type of work (N = 819)

Variable	Between Groups			
	SS	df	M. Square	F
Gender	18.79	1	18.790	7.633**
Education	199.692	2	99.846	43.127***
ToW	2.8	1	2.8	9.095**

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

Finally, we used Pearson correlation analysis to determine the relationship between monthly income and job satisfaction. The SPSS results indicate that there is a significant relation between monthly income and job satisfaction (Pearson $r = .241$, $p < .001$ ***). Workers with higher monthly incomes tend to have higher job satisfaction than those with lower monthly incomes.

Research Findings 2: Path Analyses

Path Model 1: Job Satisfaction

The results of a path analysis of AMOS, shown in Figure 5 and Table 6, indicate that there is no significant relation between gender and type of work (standardized β coefficient = -.03). There is also no significant relation between years of education and type of work (standardized β coefficient = .06). Though type of work cannot be clearly related to gender and education, it has an important effect (standardized β coefficient = .30***) on monthly income, which, in turn, plays a key role in job satisfaction (standardized β coefficient = .51***). The variable of monthly income is clearly and directly related to gender (standardized β coefficient = -.15***) and to years of education (standardized β coefficient = .20***). The dependent variable of job satisfaction is clearly and directly related to type of work (standardized β coefficient = .14***) and years of education (standardized β coefficient = .13***). Generally speaking, years of education not only directly influence job satisfaction but also indirectly affect job satisfaction through the intervening variables of type of work and monthly income. Table 8 shows the six significant paths of Path Model 1. Although the model's Chi-square value is 4.749*, the RMSEA value is .05* and the CFI value is .980 (.900 is the minimum value for acceptable maximum likelihood). This means that our postulated Path Model 1 corresponds roughly with the data from the survey.

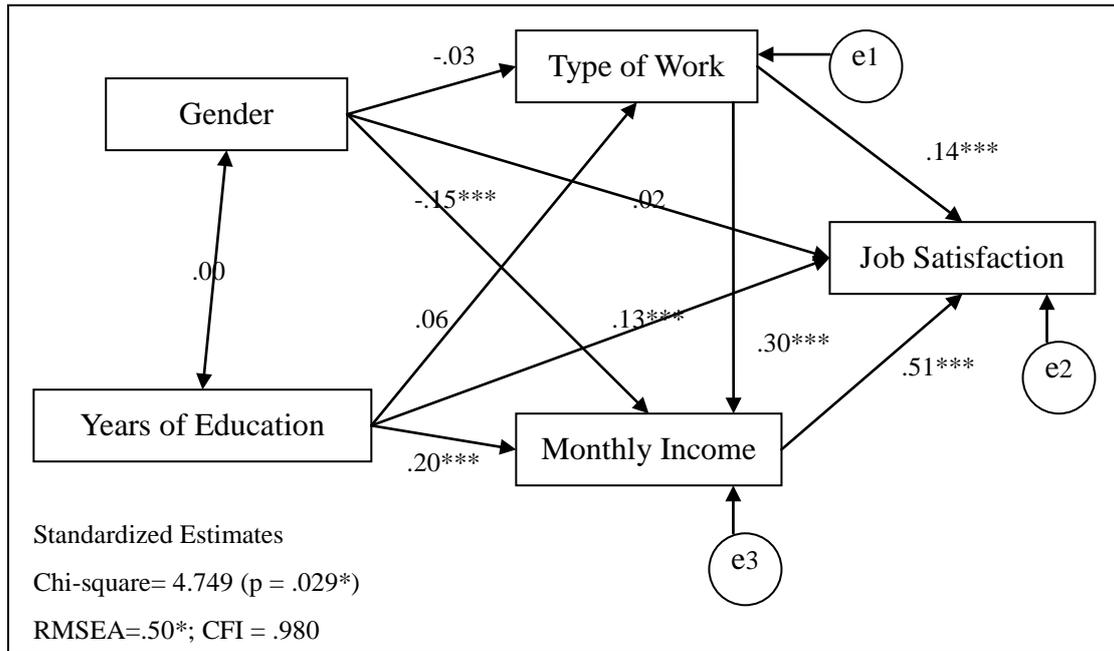


Figure 5. Path Model 1

Table 6. Summary of maximum likelihood estimates regression weights:
 Path Model 1

Path	Estimate	S. E.	C. R.	P value
Gender→ToW	-.062	.071	-.873	.383
Edu→Tow	.018	.011	1.644	.100
Gender→MI	-11806.149	2374.260	-4.973	***
Edu→MI	2434.847	370.802	6.566	***
ToW→MI	11250.316	1181.809	9.520	***
Gender→JS	.073	.078	.925	.355
Edu→JS	.063	.012	5.048	***
ToW→JS	.209	.044	4.723	***
MI→JS	.000	.000	17.558	***

The path analysis effect summary for Path Model 1 is shown in Table 7. Among all

variables monthly income plays the greatest role in job satisfaction (standardized direct effect coefficient = .508). The second most important influence on job satisfaction is type of work. Type of work not only directly influences monthly income (standardized direct effect coefficient = .303) and job satisfaction (standardized direct effect coefficient = .138) but also indirectly influences job satisfaction by affecting monthly income (standardized indirect effect coefficient = .154). The total effect coefficient of type of work on job satisfaction is .292. The third most important influence on job satisfaction is education (standardized direct effect coefficient = .128, standardized indirect effect coefficient = .120, total effect coefficient = .248). The literature suggests that gender plays a key role in monthly income and job satisfaction, and our path analysis effect summary for Path Model 1 shows that gender directly influences monthly income (standardized direct effect coefficient = -.153), but its indirect influence on job satisfaction through its effect on type of work is weak (standardized indirect effect coefficient = -.009). The total effect coefficient of gender on monthly income is -.162, but gender has little effect on job satisfaction (total effect coefficient = -.064).

Table 7. Path Analysis effect summary for Path Model 1

Path Analysis Effect Summary (Standardized)				
		Dependent Variable: Endogenous Variable		
Independent Variable		ToW	MI	JS
Exogenous Variable				
Gender	Direct Effect	-.030	-.153	.023
	Indirect Effect	-	-.009	-.087
	Total Effect	-.030	-.162	-.064
Education	Direct Effect	.056	.203	.128
	Indirect Effect	-	.017	.120
	Total Effect	.056	.220	.248
Endogenous Variable				
ToW	Direct Effect	-	.303	.138
	Indirect Effect	-	-	.154
	Total Effect	-	.303	.292
MI	Direct Effect	-	-	.508
	Indirect Effect	-	-	-
	Total Effect	-	-	.508

Path Model 2: Gap in Job Satisfaction before and after the Global Financial Crisis

We used Path Model 2 to determine if there was a significant difference in the respondents' job satisfaction before and after the global financial crisis (between August 2008 and August 2009). The path figure and summary of the estimates for Path Model 2 are shown in the Figure 6 and Table 8. Although the model's Chi-square value is 4.749*, the RMSEA value is .05*, and the CFI value is .974. The postulated

Model 2 corresponds roughly with the data from the survey. Table 10 shows the six significant paths in our path model. Type of work is shown to have the most important effect on GiJS (standardized β coefficient = .38***), followed by years of education (standardized β coefficient = .13***), and monthly income (standardized β coefficient = .11***).

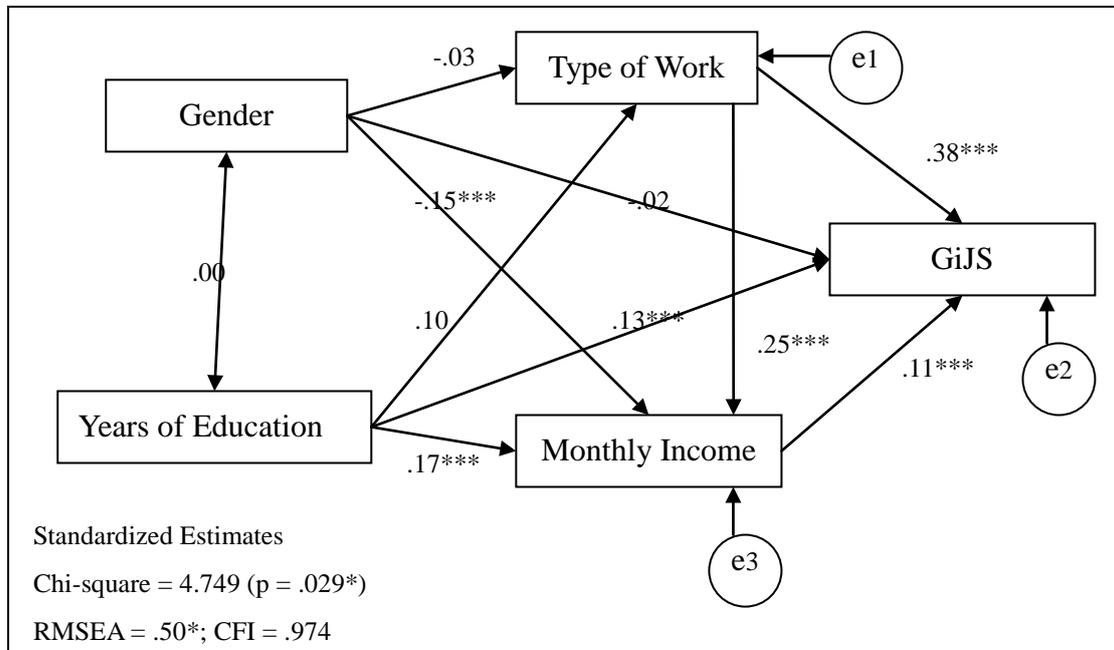


Figure 6. Path Model 2

Table 8. Summary of maximum likelihood estimates regression weights:

Path Model 2				
Path	Estimate	S. E.	C. R.	P value
Gender→ToW	-.056	.073	-.765	.444
Edu→Tow	.034	.011	3.033	.002
Gender→MI	-10283.956	2193.457	-4.688	***
Edu→MI	1781.122	343.846	5.180	***
ToW→MI	7802.194	1026.450	7.601	***
Gender→GiJS	-.058	.095	-.614	.539
Edu→GiJS	.073	.015	4.891	***
ToW→GiJS	.613	.051	12.077	***
MI→GiJS	.000	.000	3.445	***

The path analysis effect summary for Path Model 2 is shown in Table 9. ToW has the highest effect on GiJS. The standardized direct effect coefficient of ToW on the GiJS is .375, the standardized indirect effect coefficient, .029, and the total effect coefficient, .404. These findings suggest that, as a result of the global financial crisis, the gap in atypical workers' job satisfaction is much larger than the gap in typical workers' job satisfaction. Years of education have the second-highest effect on the GiJS. The standardized direct effect coefficient of years of education on the GiJS is .133, the indirect effect coefficient, .061, and the total effect coefficient, .194. These findings suggest that, as a result of the global financial crisis, the GiJS of workers with low levels of education is much larger than that of workers with high levels. Monthly income has the third-highest effect on the GiJS. The standardized direct

effect coefficient of monthly income on the GiJS is .114, which suggests that the global financial crisis led to a much higher GiJS for low-income workers than for high-income workers. Gender was shown to have less effect on the GiJS than the other variables, though it affects the GiJS by influencing type of work and monthly income. In fact, our findings reveal that, of all respondents, female atypical workers experienced the biggest decreases in their GiJS scores.

Table 9. Path analysis effect summary for Path Model 2

Path Analysis Effect Summary (Standardized)				
		Dependent Variable : Endogenous Variable		
Independent Variable		ToW	MI	GiJS
Exogenous Variable				
Gender	Direct Effect	-.026	-.154	-.017
	Indirect Effect	-	-.006	-.028
	Total Effect	-.026	-.160	-.045
Education	Direct Effect	.102	.171	.133
	Indirect Effect	-	.026	.061
	Total Effect	.102	.197	.194
Endogenous Variable				
ToW	Direct Effect	-	.251	.375
	Indirect Effect	-	-	.029
	Total Effect	-	.251	.404
MI	Direct Effect	-	-	.114
	Indirect Effect	-	-	-
	Total Effect	-	-	.114

In sum, as a result of the global financial crisis, atypical workers, workers with lower

educational levels, and workers with low monthly incomes have significantly lower job satisfaction than workers with typical employment, high educational levels, and high monthly incomes. These disadvantaged workers have experienced even greater decreases in their job satisfaction as a result of 2008 global financial crisis.

Conclusion

One result of the current global financial crisis is a job crisis, which is eroding labour market institutions and social safety nets. Against this backdrop, we have analyzed the effects of the financial crisis on the Taiwanese labour market, especially on those with atypical employment, to determine if there is a significant difference in job satisfaction before and after the global financial crisis. We focus on individual experiences, on how the job satisfaction of Taiwanese workers, particularly atypical workers, has changed as a result of the crisis.

By using the data gathered during the Second-Wave Social Quality Survey conducted in Taiwan in August 2009, this study shows that gender and years of education not only directly influence job satisfaction but also indirectly affect job satisfaction through intervening variables such as type of work and monthly income. Our path

analysis for job satisfaction shows that monthly income has the greatest effect on job satisfaction, followed by type of work, and, then, education. Gender directly influences monthly income, but gender's indirect influence on job satisfaction (through its effect on type of work) is weak. Gender plays only a slight role in job satisfaction. The path analysis for 'gap in job satisfaction' (GiJS) before and after the global financial crisis shows that there was a significant difference in the GiJS among respondents: type of work plays the most important role in influencing GiJS, followed by years of education, and, then, monthly income. Gender has less effect on GiJS than other variables, though it does affect the GiJS indirectly because of its effect on type of work and monthly income.

The findings of this study suggest that, as a result of the current global financial crisis, atypical workers, workers with low educational levels, and workers with low incomes have seen an increase in the instability of their employment and experience less job satisfaction. Some must submit themselves to a reduction in working hours and work-related benefits, and some have been forced to transfer from full-time work to part-time contract work. Many job seekers have no choice but to accept unstable atypical work. Most are excluded from employment-related social protection. The state must provide greater employment and social protection in order to address the

problems of insecure employment, working poverty, and decreased job satisfaction.

This draws our attention to the connections between institutional arrangements and individual factors that contribute to the situation in Taiwan. The job satisfaction of atypical and typical workers reflects not only their personal feelings about their jobs but also the effectiveness of the country's economic and social institutional arrangements. Over the past two decades, atypical employment in most countries has been vulnerable to economic downturns. It expands rapidly during periods of growth but contracts equally rapidly during recessions. Today, many atypical workers have kept their jobs, but they have not been given enough working hours to sustain themselves or their families. In order to maintain socio-political stability and to preserve human capital for future periods of growth, the government must protect atypical workers. According to the ILO (2009a) Global Jobs Pact, economic and social recovery would be significantly accelerated if all the ILO member states agreed on employment and enterprise policies, a basic level of social protection, and the general application of fundamental labour principles and rights.

The economy, employment, job satisfaction, and social protection are all intertwined in the general fabric of society. The state must integrate these key socio-economic

elements of society into its new strategies and policies. In periods of crisis, the state must invent new training strategies to restructure human capital, not only to address demands for more workers in existing industries but also to encourage the exploration of new ventures and market opportunities that would be possible if workers had the requisite skills.

The Taiwanese government must accelerate the country's economic growth and solve the problems associated with unemployment and working poverty. It must address the fundamental situation by developing new industries, which will create new employment opportunities. It needs to encourage cutting-edge technologies to avoid the possibility of stagnation when the economy starts to recover. The OECD *Employment Outlook* (2009) stresses the importance of finding effective ways to provide adequate income and re-employment support to those who have lost their jobs or been otherwise disadvantaged by the economic downturn. Still, we are only in the early stages of designing the labour market policies that will best address severe economic downturns.

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