

**THE IMPACT OF MINIMUM WAGE ON EMPLOYMENT, HOURS OF WORK
AND HAPPINESS OF LOW WAGE WORKERS IN KEDAH.**

By

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ABSTRACT

This study estimates the effects of minimum wage on employment (working or not working), hours of work and happiness level of low wage workers in Kedah, Malaysia. The panel data are collected and it is used to examine the effects of minimum wage in Kedah, Malaysia. The panel data enables the use of the technique of difference estimator - before and after the implementation of the minimum wage. The results show that implementation of the minimum wage has no effects on the employments during the period of study, however it significantly reduces hours of work per day on average, increase significantly overall life happiness, increase happiness level of low wage workers at work but insignificantly and increase the basic salary. Increase in minimum wage helps the low wage workers meet the basic needs as suggested in Maslow theory of motivation. Most of the companies having difficulties in implementing the minimum wage, thus it is recommended that, government can divide the minimum wage to several rates such as for Adults (21 years and over), Young Development Rate (18-20 years), Young Person Rate (under 18 years) and Apprentices (without age limit).

ABSTRAK

Kajian ini menganggar kesan gaji minimum ke atas guna tenaga (bekerja atau tidak), jam bekerja dan tahap kegembiraan pekerja yang bergaji rendah di Kedah. “Panel data” telah dikutip dan digunakan untuk menganalisis kesan gaji minimum di Kedah, Malaysia. “Panel data” membolehkan penggunaan teknik penganggar perbezaa - sebelum dan selepas pelaksanaan gaji minimum. Hasil dapatan menunjukkan bahawa pelaksanaan gaji minimum tidak mempunyai kesan ke atas guna tenaga dalam tempoh masa kajian dilakukan, namun ia mengurangkan purata jam bekerja dengan signifikannya, meningkatkan kegembiraan hidup keseluruhan dengan signifikannya, meningkatkan kegembiraan di tempat kerja tetapi tidak signifikan serta meningkatkan gaji pokok pekerja. Peningkatan dalam gaji minimum membantu pekerja bergaji rendah memenuhi keperluan asas mereka. Kebanyakan firma mengalami kesukaran untuk melaksanakan gaji minimum, maka, dicadangkan kerajaan boleh membahagikan gaji minimum kepada beberapa kadar seperti untuk kadar dewasa (21 tahun dan ke atas), kadar pembanguan orang muda (18-20 tahun) orang muda (di bawah 18 tahun) dan pelatih (tanpa had umur).

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CHAPTER 1

INTRODUCTION

This chapter presents a brief description introduction on the background of minimum wage in Malaysia including the problems faced by low wage workers in Malaysia. The aims of minimum wage to cope with increasing cost of living are also described. In addition, the problem statement, research question and objective, significance of studies and organization of the study are also presented in this chapter.

1.0 Background of Minimum Wage

The ongoing and persistent debate about the minimum wage legislation has recently been unsettled discussion even though many countries which has minimum wage legislation including Malaysia. The problems which lead to the study are, in many countries, a part of society living in luxury, while the other part of the society is struggling to survive in their basic living and exist of inequality in income distribution. The (GINI) coefficient of Malaysia, according to the International future forecast System in year 2013 is 0.472¹ where GINI coefficient of zero means perfect equality while 1 implies perfect inequality. Thus, Malaysia is facing unequal distribution of income. Moreover, this inequality could be widened in future as the rich people become richer and the poor people become poorer.

Minimum wage is a basic wage or the minimum hourly wage an employer is required to pay an employee. According to Borat, Kanbur & Mayet (2012); and Ministry of Business Innovation and Employment (2013), the first country to introduced minimum wage

¹ This is the latest available statistics is in http://www.ifs.du.edu/ifs/frm_CountryProfile.aspx?Country=MY

legislation was New Zealand in 1894 and the current minimum wage is set at NZ\$13.75 per hour.

The Malaysian government introduces minimum wages to be on the economy and it is the first time had been introduced in Malaysia history. As announced by the Prime Minister of Malaysia in his budget speech on October 2010 (Zulkifly Osman, Zakariah Abdul Rashid & Khalid Abdul Hamid, 2011). Minimum wages come into operation on 1st January 2013.

Refer to Table 1.1 in Malaysia; the rate of minimum wage is not similar. However, in some countries the rate of a minimum wage rate set according to region. For example, in Indonesia the minimum wage rate is US\$ 226.50 and in Central Java is US\$ 85.45 thus the rate of minimum wage is different according to the region. In Singapore presently there is no limits minimum wage, where the wages were decided by open market in a regime.

In developed countries such as the United States has set minimum wage according to the region also. The minimum wage rate per hour in 2013 is California \$8.00, Arizona \$7.80, Alaska \$ 7.75, Alabama \$7.25 and so on. However in United Kingdom the minimum wage has set based on age. For example in the year 1999 the minimum wage rate is at £3.60 per hour for those aged 22 and over and in general £3.00 for those aged 18-21 (Dickens and Manning, 2002). In October 2000, the adult rate was raised to £3.70 and to £4.10 in October 2001. According to the National Minimum Wage United Kingdom (2013) from October 2013, the rate of minimum wage in the United Kingdom is; for those ages 21 and over is £6.31, age 18 to 20 is £5.03, under 18 is £3.72 and for apprentices is £2.68, this means for those under 19 or on their first year. If a person is 19 years old or over and past the person's first year they get the rate that applies to the person's age.

Table 1.1: Minimum Wages in selected ASEAN countries

Geo/Time	US\$ per month	Region
Malaysia	US\$ 296 US\$ 263	Peninsular Malaysia Sabah, Sarawak and Labuan
Thailand	US\$ 279.18 US\$ 263.52	Whole country Bangkok and 6 other rich provinces
Indonesia	US\$226. 50 US\$ 85.45	Jakarta Central Java
Vietnam	US\$ 79.12 US\$ 112.68	Remote areas Hanoi, Hai Phong, Ho Chi Minch City.
Laos	US\$ 78.15	Whole country

Source: ASEAN Briefing, 2013².

Based on, International Labour Organization (ILO) Minimum Wage News “Minimum Wages key to cutting working poverty” in developing countries, the number of working poor remains extremely high, the majority of low wage earner earns below US\$2 per day (ILO, 2012). According to Malaysia Investment Development Authority, in 2012 a security guard earns around RM 28.53 per day or RM3.57 per hour which is below the target of minimum wage a of RM4.33 per hour in Peninsular and RM3.85 per hour in East Malaysia. Thus, for low wage workers, the minimum wage is binding. Thus the minimum wage legislation is to prevent the employers exploit the workers, to promote a fair distribution wage structure and finally to give a minimum satisfactory standard of living for low wage workers (Rutkowski, 2003).

² The statistic obtain from <http://www.aseanbriefing.com/news/2013/04/16/minimum-wage-levels-across-asean.html>].

Malaysia has an aspiration to be higher income and high productivity economy country by 2020 and the implementation of minimum wage is expected to play a major role in achieving this goal. According to Central Bank Annual Report 2013, minimum wage policy gives encouragement to both workers and firms to carry out productivity enhancing measure. Firms may be recommended to invest in automation and the latest technologies that could improve productivity and capacity, compare to costs between capital and labor narrows. This reduces the dependency of firms on the cheap (low cost) foreign labor (Central Bank, 2013).

To develop the skills and productivity of their employees, firms perhaps incentivized to provide training. Perhaps, firms may be asked to switch in turn and recommended to undergo a change to value chain be more competitive since they depend on lower reliance on low cost unskilled labor. For workers, the potentials for the acquisition of higher skills would the greater availability of jobs with higher wages encourage involvement in industries that were previously avoided. These changes would help the transformation of development Malaysia into high value-added and high income country by 2020 (Central Bank, 2013). Thus, the minimum wage is one of the important catalysts in this transformation. Table 1.2 presents the minimum wage of Malaysia.

Table 1.2: The minimum wage payable to an employee shall be follows.

Regional Areas	Minimum wage rate	
	Per month	Per hour
Peninsular Malaysia	RM900	RM4.33
Sabah, Sarawak and Federal Territory of Labuan	RM800	RM 3.85

Source: National Wage Consultative Council 2012.

Malaysia intends to become a high income country by the year 2020 and promote industries up-scaling in terms of value added and it is one of the objectives of minimum wage. On the other hand, the purpose for introducing the minimum wages is to increase wages for low skilled workers, so that their incomes are not far behind the middle income level. Furthermore, the aim is to overcome inefficiencies in the labor market and reduce dependencies on cheap and unskilled foreign labor (Zulkifly Osman, Zakariah Abdul Rashid & Khalid Abdul Hamid, 2011). This will encourage transition low wage worker to high wage, from low consumption of the high consumption household and from informal labor market to formal labor market. For example, transition of low wage workers from informal to formal labor market (due to high wage in the formal labor market when the minimum wage is implemented).

The Minimum Wage bill, which resulted in formation in the National Wage Consultative Council Malaysia, includes an employee protection element that allows employers to be fined RM 10, 000 for each employee who is not paid the minimum wage (Ambrose, 2011). Employers who employ more than five employees will come under the preview of Minimum Wages Order 2012. On the minimum wage bill, National Wage Consultative Council Malaysia has decided to set the minimum wage similar to overall Malaysia, this is because

to prevent migrating to new places. For avoiding the low wage workers migrated, the National Wage Consultative Council will review the rates once every two years and to make sure that the suggested minimum wages does not stagnate.

Studied by Lee (2012) the national mean wage of Malaysia is RM 1804.43 in 2010. The minimum wage RM 900 is part of the national mean wage 49.9 % in 2010. Refer to Table 1.3, the new rate of minimum wage RM 800 will have a huge impact on Sabah and Labuan because current average salary for low wage workers is RM 577 and for Sarawak the current average salary is RM758.00 and the new minimum wage is RM 800. For Peninsular the new minimum wage is RM 900 and it is below than the current average salary for low wage workers RM1131.00. Thus it might have no effect or less effect on low wage workers in Peninsular of Malaysia as the average salary is higher than the minimum wage. However, based on National Wage Consultative Council Malaysia, has mentioned that, there are 33.8% private sector workers earns RM700 below per month, relative to the national poverty line RM800.

The Government has set the minimum wage less than the average wage because, as a rule of thumb, some developing countries which implement minimum wage for the first time have to set the minimum wage 40% lower than the average wage to prevent unemployment and inflation.

Table 1.3: Differences between minimum wage, average wage and poverty line index

State	Minimum wage	Current average salary for low paid workers	2010mean wage	2009 PLI
Peninsular	RM900	RM1131.00	RM1739.16	RM763.00
Sabah	RM800	RM577.00	RM1565.93	RM1048.00
Sarawak	RM800	RM758.00	RM1630.48	RM912.00

Source: CIMB Research, 2012³.

1.1 Problem statements and Research Questions

Malaysia is an upper middle-income developing country that experienced rapid economic growth during the past four decades. GNI per capita Malaysia is US\$ 9800⁴ per year in the year 2012 (World Bank, 2012). However, based on the World Bank report (2011), stated that the Malaysia wage growth was 2.6% per annum in the past 10 years compared to productivity growth of 6.7%. This indicates suppression of wages, especially for low wage workers. It is clear that there is evidence of wage suppression in Malaysia. Minimum wage is a tool to reduce the suppression for the low- income earner and how effective is minimum wage in increasing the income of low wage workers? We are still lacking of studies on the effect of minimum wage on lower income earners.

Minimum wage is introduced in Malaysia to increase the standard of living of low wage workers and to become a high level income country by 2020.

³ This statistics obtain from [http://etp.pemandu.gov.my/upload/CIMBMinimum_wage_policy%E2%80%93Curse_or_Cure.pdf].

⁴ The Gini Coefficient is based on Atlas Method.

However, according to the neoclassical prediction or the text book prediction on minimum wage implies that if wages increase it will lead to decline in employments. Thus, Malaysia might face negative employment effects.

There are many companies still yet to implement minimum wage legislation because might be facing financial problem and it might lead to an eliminated of fewer workers so that they can run the company. Therefore, we need studies on minimum wage because minimum wage might have negative effects and further research needs to be done in order to explain the minimum wage policy. The findings of studies from developed and developing countries are inconsistent. Some find that the minimum wage brings positive effects on low wage workers, some find negative effect on low wage workers and others find ambiguous.

However in terms of Malaysia case we are yet to have an empirical study on minimum wage since the minimum wage legislation still new in the place. Employers might attempt to reduce hour of work of employees to avoid paying minimum wage. Nevertheless, the employer might try to reduce working days as well to avoid paying minimum wage. Moreover, they might do some adjustment to the working hours of the low wage workers. In Malaysia, we still lack of studies on hours of work of low wage workers. Thus, this study might contribute to the literature.

Happiness is one of the hottest topics in economics research nowadays. According to Wong (2013) in the budget 2014, emphasis on the happiness of people (Malaysia Happiness Index) has a tool to measure the county's development. Income increase; happiness should increase if income (through consumption) could translate into happiness.

According to the income-happiness paradox, over time, the increase in income might not necessarily increase the happiness. People in developed countries are normally happier than those people in less developed countries in general (Frey & Stutzer, 2002).

In a recent study, in Australia by Melbourne researchers has found that cross household income of \$100,000⁵ is the key to happiness (Brown, 2013). However, there are many less developed countries and transition country with citizens going through low satisfaction in their life, at the lower end of the scale. Moreover, there are reports that say that exceptional countries with low per capita income has a high average satisfaction across. Thus, the connection between happiness and income per capita across countries are complicated and ambiguous. According to the World Happiness Report (2013) Malaysia happiness level decrease -0.377 if compared to year 2005-2007 to 2010-2012. Income consists of wages, thus increase in minimum wage, might lead to increase in happiness level, or it might lead to decrease in happiness level. This is still ambiguous. Happiness is the ultimate aim of human beings thus it should be one of the focuses on the impact of minimum wage. In connection with that, we need studies to ensure that whether the increase in income that due to minimum wage implementation have an impact on happiness level of employees. Thereby, this study attempts to answer the following research questions:

- a. Do minimum wage leads to unemployment?
- b. Is there any change in hours of work due to implementation of minimum wage?
- c. Does minimum wage (increase in income level) increase happiness?

⁵ The data obtain from <http://www.abc.net.au/news/2013-07-02/researchers-find-money-is-one-of-the-keys-to-happiness/4793388>

1.2 Research Objectives

The study is designed to analysis the minimum wage in achieving the objective of minimum wage in Malaysia with following general and specific objective.

General Objective

To examine the impact of minimum wage in Malaysia; using panel data.

Specific objectives

- a. to estimate the effects of minimum wage on employment of low wage workers in Malaysia;
- b. to estimate the effects of minimum wage on hours work of low wage workers in Malaysia; and
- c. to estimate the effects of happiness on minimum wage of low wage workers in Malaysia.

1.3 Significance of the study

The research is based on recent minimum wage implementation in Malaysia year 2013. Low wage workers are elementary occupations workers. It contributes to the empirical studies through the examination of the effect of minimum wage on employment, hour of work and happiness of low wage earners in Malaysia. The minimum wage brings positive effects to the lower wage workers (elementary occupations workers) if the minimum wage does not lead to unemployment or cause inflation. Thus it will help the policy maker to view the effectiveness and make adjustment in minimum wages according to the current economic

level. To provide the understanding of the impacts of the minimum wage in developing or poor countries is one of the contributions of the study.

Through the discussion of happiness of low wage workers intention on the significance and impact of the minimum wage on happiness give new insights on the Malaysia labor market. As suggested by Ng (2008, p. 253), “*Public policy should put special attention on factors more important for happiness than economic production and consumption...*”. Thereby, analysis minimum wage on happiness level of low wage workers in Malaysia is imperative which will produce findings which bear significant policy implications. Other than economists, this paper which extends the minimum wage to happiness should be interesting and reachable not only by economists but also to policy maker and researchers from the happiness studies field.

Hence, the study will broaden the knowledge of minimum wage in Malaysia mainly in the labor market. In spite of that, the research also seeks to expand minimum wage in Malaysia context by addressing the gaps in the literature review through minimum wage on employment, hour of work and happiness.

The result of the study will useful in future to the Government to set minimum wage of employees. Government of Malaysia will review the minimum wage policy once in two years; this study can help to review the effect of the minimum wage. Thus, Ministry of Human Resources will benefit from the findings of this study and it can help to review the minimum wage in the future. Since we lack of studies on minimum wage, the study might help to improve the existing policy. I believe that a systematic analysis on this issue could

provide useful information to policy makers in understanding and addressing policy issue particularly the ones relate to labor markets such as minimum wage

1.4 Organization of the study

This study is organized as follows. Chapter 1 outlines the background, problem statements and research objectives, significance of the study and organization of the study. Chapter 2 reviews the existing literature review on the effects of minimum wage for employments, hours of work and happiness. Chapter 3 describes the data and methodology of the study. Chapter 4 contains the result and analysis I: descriptive statistics of the study. Chapter 5 contains the results and analysis II: modeling. Lastly, chapter 6 consists of discussion and conclusion.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter presents a brief discussion on theoretical review on the effects of minimum wage on employments, hour's work and happiness. In addition, empirical evidence and conclusion is also presented in this chapter.

2.1 Theoretical reviews

In this chapter, the theoretical models on minimum wage and happiness are reviewed for their implication in the present study. These models are the neoclassical model of minimum wage, Monopsony model of minimum wage, other advanced models in minimum wage, Easterlin paradox in happiness-income and Maslow theory of motivation.

2.1.1: The Neoclassical Model.

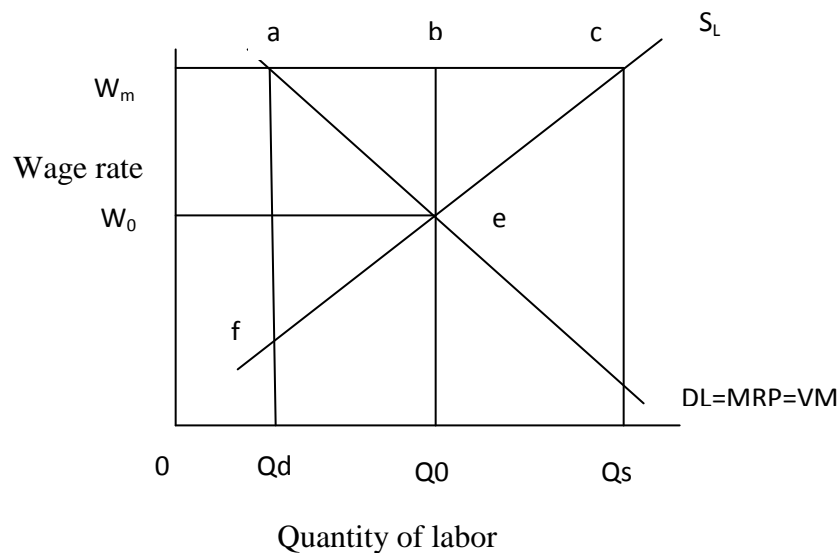


Figure2.1: *Minimum wage effects: Competitive model.*

Figure 2.1 shows the impacts of minimum wage on employment. According to the neoclassical model with the assumption of perfect competitive market structure, it is predicted that if minimum wage imposes, the employment will decline. Figure 2.1 shows that labor and product markets are in equilibrium under the perfectly competitive ($MRP=VMP=MWC=P_L$) and assume, overall employees in the economy are covered by the minimum wage law.

The figure depicts those effects of a specific minimum wage W_m on a labor force in which the initial equilibrium wage and employment levels are at W_0 and Q_0 respectively. Due to the implementation of minimum wage of W_m , employers will recruit only Q_d workers than the original Q_0 . The marginal product of the Q_d through Q_0 low wage workers will be less than the minimum wage therefore profit maximizing employers will reduce employment. If other things constant, the higher minimum wage compared to the equilibrium wage, thus the bigger the negative employment and distribution effects; and the more elastic the labor supply and demand curve, the bigger the unemployment outcome of the law (McConnell, Brue & Macpherson, 2009).

The neoclassical model is the simplest form model, it is assumed that labor and product markets are competitive and covered by minimum wage (thus firms hold wages, interest rate, prices as assigned), in labor force there are only have one type of labor, output is produced with combination of labor and capital, and overall workers. Once the minimum wage implemented, the minimum wage was set greater than the equilibrium wage level, firm's marginal cost of production and move two economies large effects rise (Neumark &

Washer, 2010). Firms replace capital for labor in the manufacturing process because the higher wage rate. As a result, the demand for labor falls.

The assumption of the neoclassical model is not realistic relevant because it is assumed that overall the workers are covered by the minimum wage legislation. For instance, less developed countries or developing countries, where the coverage is often low and noncompliance is high (Neumark & Washer, 2010). In connection with that, there are still many companies in Malaysia have not complied with the minimum wage legislation and applied for the extension of date of implementing a minimum wage. Thus the effects of the minimum wage could be less than what has been predicted by the neo-classical model.

The neoclassical model also examines the difference between short-run and long-run effects of minimum wage due to increase in the minimum wage. It has been mentioned that, adjustments to an increase or decrease (changes) in the minimum wage in the short or long time period are almost same because the quick turnover of workers in labor markets that employ minimum wage workers makes the employee and dismiss costs insignificant (Neumark & Washer, 2010). There are some researchers such as Atlas and Cameron (2008) stated that Card and Kruger (1994) have just examined the short run effects on minimum wage before and after the implementation of the minimum wage. However, the neoclassical predicts that, in the period of short time period or long time period the outcome or effects of minimum wage on employment are quite similar.

According to Neumark and Washer (2010) finds that Hamermesh (1995) says even if adjusting labor input is a minimal cost, sizeable adjustment cost for capital or other inputs can result in lags in the adjustment of labor. Hamermesh argument was “*We can take the*

short time period effects to be adjusted in employment over a period during which the capital stock is fixed so in this case, the firm cannot replace capital for less skilled labor in response to a rise in the minimum wage and so the reduction in less skilled labor has reduced until that adjustment can occur” (Neumark & Washer p. 53, 2010).

The implication of the theoretical review of neoclassical, on minimum wage in the case of Malaysia is the minimum wage might leads to unemployment. However, the employment effects can be traced out in the short run as suggested by Neumark and Washer (2010).

2.1.2 Other advanced theory of the new minimum wage model.

There are extension of neoclassical model such as Welch’s Version of the Model and Gramlich and Mincer Version of the Model (two sector model).

Welch’s Version of the Model

According to this model, the proportion of employment before the minimum wage which the industries will impose the minimum wage can be expressed by the following formula:

$$c = \frac{D_c(W_0)}{D_c(W_0) + D_u(W_0)} \dots\dots\dots (1)$$

Where;

C= Proportion of employment before the minimum wage implementation which the industries are subjected to.

D_c = Demand for covered sector

S = Supply

W₀ = Wage

D_u = Demand for uncovered sector

Wages in the two sectors are equal before the minimum wage imposed, in the uncovered sector the labor supply is $(1-C) S(W_0)$ equal to demand in the uncovered sector $D_u(W_0)$

Welch assumes that, once the minimum wage imposed, each of the workers $S(W_m)$ labors accepted to work at the level of minimum wage and has the probability of receiving one of the $D_u(W_m)$ covered jobs sector.

$$f = \frac{D_c(W_m)}{S(W_m)} \dots\dots\dots (2)$$

Covered jobs, for instance jobs covered by minimum wage, are allocated randomly among all workers, and the individuals who do not get these jobs end up working in the uncovered sector if the wage in that sector is higher than their reservation wage. In the uncovered sector (a sector that not covered by minimum wage) an individual who unable to find workers either accept the job or, if the sector which not covered by minimum wage, the wage will be too low, and thus drop out from the labor force. Thereby, the impacts of the minimum wage on employment are no negative employment effects in the model (Neumark & Washer 2010).

In Malaysia case, if the labor could not find the job in the covered sector they might shift to the uncovered sector such as domestic services. It might help to solve the problem facing by Malaysian regarding lack of domestic helpers in this country. Thus, this theory predicts that the adverse effect of the minimum wage might be moderated by moving of labor among the

covered and uncovered sector. If this moderating effect is dominant, one might find that the minimum wage implementation has no effect on unemployment.

Gramlich and Mincer Version of the Model

The expected wage in covered sector is an element of the minimum wage and the chances of recruit a labor, meanwhile the expected wage in the uncovered sector has been equitable to equilibrium wage, in connection with that everyone who chooses uncovered sector gets a job.

In this model of Gramlich and Mincer, individuals who are unable to find jobs assumed to be queued in the sectors (covered sectors) thus there is unemployment in the markets. In the general, economist's emphasis on the effect of the minimum wage on employment instead of disemployment, rather the increase in minimum wage leaves individuals unemployed or causes them to drop out of the labor force (Neumark & Washer, 2010).

In connection with this theory with Malaysia case, workers who unable to find jobs might be queued up to get jobs in the covered sector (a sector that covered by minimum wage legislation). However, the workers might not queue up because there are many companies yet to implement minimum wage.

2.1.3 Monopsony Model.

According to the monopsony model, if the minimum wage increases, the level of employments will increase too. According to Neumark and Washer (2010), Robison, (1993, p. 295) shows that in the labor market when a firm has monopsony power if minimum wage not set too high, a minimum wage can lead to an increase in employment. Intuitively, this

has happened because the minimum wage reduces the marginal cost of hiring an additional worker (although it does raise the firm's average cost).

As in Malaysian case, the effects of minimum wage on employment might leads to increase in employment. This is because; more workers are needed in the low wage sectors such as cleaners and many more.

Keynesian Paradigm.

According to Keynesian's theory, it gives a clear explanation in terms of the macroeconomic level foundation of why the minimum wage increase does not lead to unemployment. Keynesian theory suggests that as a household (low wage workers) who receive minimum wage tend to have a higher tendency to consume goods and services compared to rich household, the level of purchasing is also estimated to be enhanced efficiency which will have a significant impact on aggregate demand, production and employment. Thus, an increase in the minimum wage in Malaysia will help low wage workers to consume more goods, thus the demand of the goods increase and indirectly in will increase the output and employment as suggested by Keynesian.

However, at the disaggregate level; an increase in the minimum wage can have negative employment effects in some industries. According to Herr and Kazandziska (2011) finds that in partial analysis security or cleaning industry increases prices due to an increase of wages, thus it reduces demand and employment.

2.1.4 Theoretical Prediction Minimum Wage on Hours of Work

According to Stewart and Swaffield (2004) in connection with wage increment workers might be working harder per hour to increase productivity, thus in particular task reducing the overall hours required to work. The effects of a minimum wage increase on hours might to rely on the wage distribution on an individual's position. The employees who primarily earn subminimum wage w , if initial wage reflects productivity, the workers who stay in the labor force are rare to undergo a reduction in hours compared to higher paid workers who remain employed (Zavodny, 2000).

The content of competitive model, prediction of hours work is complicated. This is because, the reality that the full-time employee receives more wages than part time employees, which recommended that capability of full-timers workers in generate is extra per hour. According to Stewart and Swaffield (2004), if this is the case, in response to a minimum wage, firms would be expected to lengthen workweeks instead of reducing the workweeks (Brown, 1999, p, 2117).

We could expect if there are high fixed costs per worker and part time workers are less productive relative to full time workers, as above, the number of minimum wage workers to reduce within a firm after the implementation of minimum wage and increment in per minimum wage employee of the hours worked.

Nevertheless, the expected effects on hour's work per worker are ambiguous (Zavodny, 2000; Gindling & Terrell 2004). In order to keep maintain the particular value of the marginal product of labor equal to the wage, employers must pay a higher wage, thus the

employers will try to replace with higher skilled workers for lower skilled workers (Zavodny, 2000). The relative effect on hours is seems to be huger among all workers than among workers who stay employed because hours of work clearly go to zero for those workers who lost jobs, and unemployment effects are seems to be larger among lower wage workers (Zavodny, 2000).

Thus, the theoretical prediction of the impact of the introduction of the minimum wage on working hours is ambiguous. Thereby, the impact of minimum wage for an hour's work should be primarily an empirical evidence issue.

2.1.5 Theoretical Prediction of Happiness

According to the Easterlin paradox theory, within countries rich people, on average, happier than poor household, however studies across countries and over time finds that very little evidence, if any connection between increases in per capita income and average happiness level it is being found in most of the happiness studies.

On average rich countries is happier than poorer countries; happiness likely to rise as income increase to a certain point, however yet not beyond it. Nevertheless, even in poorer countries, the less happy people tend to be happy. However, there is no clear evidence on the relationship between average income and average happiness level and it is being suggested that marginal other factors including cultural taints, are at play within countries, income matters to happiness (Graham, 2005). However, the theoretical prediction of happiness is ambiguous. Furthermore, in some less developed countries, people still happy with what

they have. Thus, we need to carefully analysis through empirical study of happiness level of people.

The implication of the study on happiness level is according to the Esterlin paradox in developing countries such as Malaysia is ambiguous. This is because the implementation of the minimum wage might lead to increase in happiness level even though Malaysia is not a high income country. Thus, empirical evidence is playing an important role in figure out the facts.

2.1.6 Maslow Theory of Motivation

In Maslow theory there are five hierarchies such as physiological, safety, belonging, Esteem and self-actualization. Physiological needs such as foods, sleep, nutrition, protein, mineral and vitamin is important to continue living. To achieve the first level of hierarchies is essential to move to the other part.

Maslow theory of motivation in the Malaysian case is those workers who are earning wages under RM800 consider as poor because they earn wages below the poverty line. Thus, workers who earn RM900 might increase their standard of their life. In order, to help the low wage workers achieve the basic life, increment in income (increase in minimum wage) helps those workers to achieve the basic needs. Thus indirectly it will increase the happiness level of low wage workers.

2.2 Conclusion from Theoretical Review.

Based on theoretical review, on the effects of minimum wage on employment and hour works, according to the neoclassical model increase in minimum wage will lead to decline in employment rate. Monopsony model predicts that, increase in minimum wage will lead to increase in the employment rate. Hours of work have been founded ambiguous result. Happiness is also producing ambiguous results. Maslow theory is important to figure out the basic needs of life is achieved. Thus, a careful empirical approach is needed to understand from minimum wage impact on employment and hour works and happiness

(Conclusion from literature review)

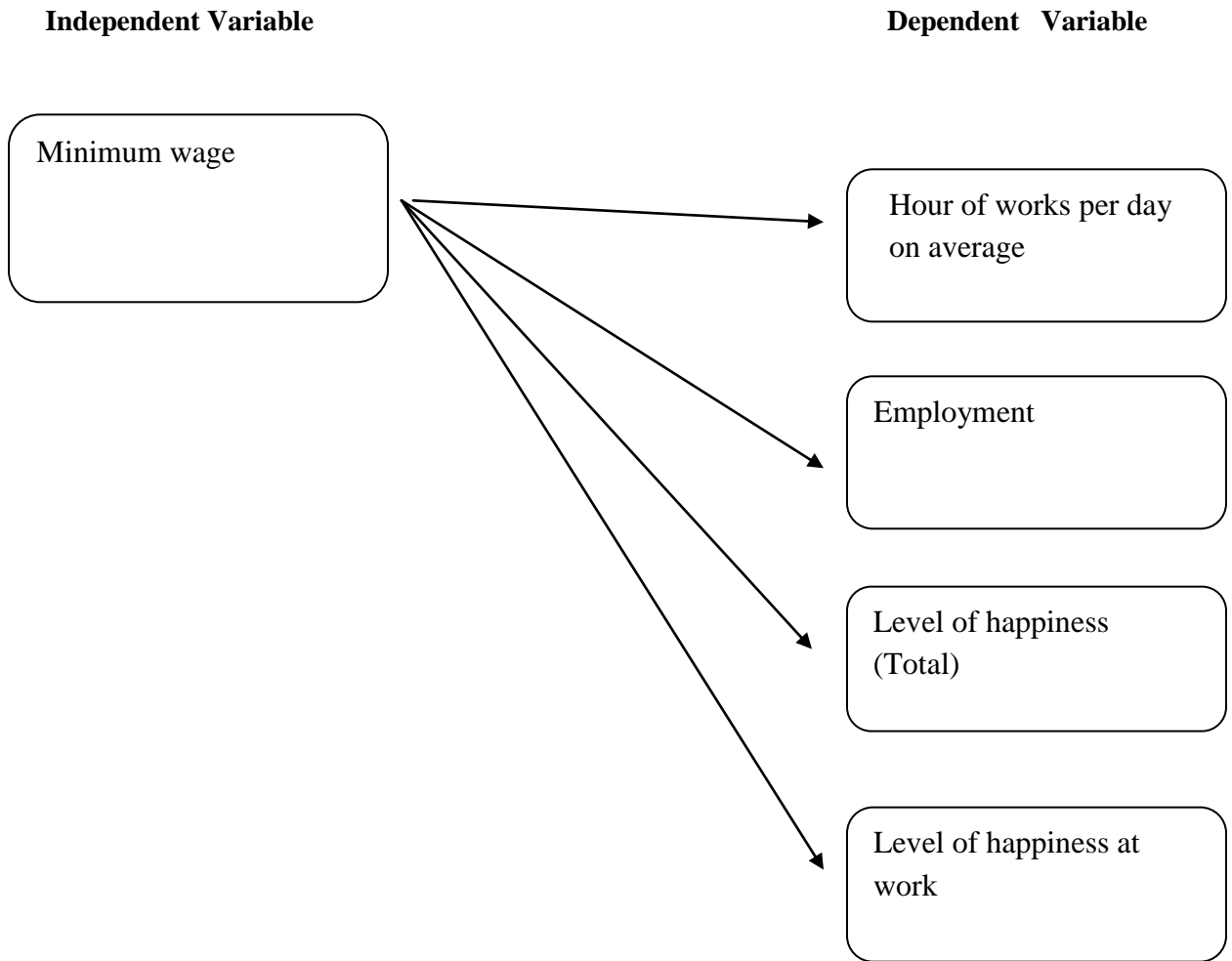


Figure 2.2: *Theoretical Framework*

If minimum wages change it will effect employments and hours of work. Increase in minimum wage will lead to employment reduction as stated in neoclassical model. However the monopsony model predicts an increase in minimum wage will lead to increase employment. Minimum wage also has connection with hours of work. This is because an increase in the minimum wage might lead an employer to reduce hours of work or increase hours of work to cope with the minimum wage. There is another variable which has connection with the minimum wage is happiness. Increase in minimum wage will lead to

increase in happiness. However, empirical studies are needed for analysis this theoretical framework, to ensure validity of this framework.

2.3 Empirical Evidence

In this section emphasis on analysis of the empirical evidence of effects of minimum wage which are found by studies across various countries.

2.3.1 Effects of minimum wage on employment

The underlying cause of introduction or increasing in minimum wage is highly debated among labor economics. There are studies on minimum wage conclude that, minimum wage hurts low wage workers, some find positive effects and some other researcher finds ambiguous result. For example Lemos (2004) finds that in Brazil, a 10 percent increase in the minimum wage increase total employment by 0.0594% while it is a 0.0598 % increase in the number of workers and 0.0004% decrease in the number of jobs. Thus, in the long run, total employment decreases by 0.04%.

Brown, Gilroy and Kohen (1982), in the earliest studies finds that 10 % increase in the minimum wage will reduce teen employment by 1% to 3%. However, Zavodny (2000) does not support the findings and finds that the studies by Brown et al. (1982) are less accurate due to less efficient data, tricky methodologies and the possibility of monopsony power.

Zavodny (2000) used both state and individual panel data and finds that at the level of 1%, increase in nominal minimum wage, the average wage affected labor is 2.3% less likely to stay employed in the United States. Gindling and Terrell (2004) finds that in Costa Rica the probit estimates of the effect of a legal minimum wage on the probability of being employed

in the covered sector, the coefficient on the minimum wage variable is -0.068 and statically significantly different from zero. From the probit analysis result, it shows that a 10% increase in the real minimum wage reduces the probability of being employed in the covered sector (covered by minimum wage) is 0.0068 %. A 10 % increase in the minimum wage reduces the probability of employed in the covered sector by 0.6 %.

Saget (2001) estimates the overall minimum wage and employment in developing countries such as Africa, North Africa, East Asia, Latin America and Turkey using cross section panel data. The results show that, Gross Demand Product (GDP) growth is significantly correlated with employment growth. Saget (2001) also finds that significant negative on the level of employment; due to increase in the real average manufacturing wage, through the t is rather low at 1.5. This is because there is possibility non-compliance in developing countries, the decrease in the real minimum wage, and the minimum wage is set at a low level (a negative effect on employment occurs when the minimum wage is set at a high level).

Based on Card and Krueger (1994) their analysis New Jersey and Pennsylvania on fast food industries due to increases in the minimum wage in New Jersey from \$4.25 to \$5.50 per hour and they find that there was no evidence that the rise in the minimum wage decline the employment using difference in difference estimator. The results also conclude that the restaurants in New Jersey, the workers were receiving high wages before the minimum wage hike did not enhance the employment growth than those received low wages. Thus they conclude that the minimum wage does not decline employment. Another study by Card (1992) the increase in the minimum wage, raised the earnings of California teenagers but did not lower their employment rate relative to workers in other states.

It is being criticized that New Jersey study on fast food industries examined by Card and Kruger (1994) is that the quality of data collected may be poor. Using actual payroll data collected from fast food restaurants from New Jersey and Pennsylvania, Neumark and Washer (2000) finds that increase in minimum wage has a negative effect on employments. Their findings show that, a simple reproducing the Card and Kruger difference in difference estimator using the payroll data indicates that the New Jersey minimum wage lead to 3.9% to 4.0% decrease in fast food industry employment in New Jersey (compared to the Pennsylvania control group), with elasticities in the range of -0.21 to -0.22.

Baker, Benjamin and Stanger (1999) also critics that new minimum wage legislation has been announced in advanced, thus the employment declines or could occur before the law takes effect. As Watson (2004) noted, Machin and Manning (1997) mention that, in the United States, minimum wage has less impact on employment because the minimum wage is so low in that country. Leonard (1999) argued that if the differences stay unchanged before and after the minimum wage increase, based on the neoclassical theory assumes that, with all the factors remaining the same, employment in New Jersey should reduce compared to Pennsylvania, thus the difference in difference estimator will be negative. However Card and Kruger find to be positive.

In addition, Atlas and Cameron, (2008) agrees that the methodology used by Card and Kruger has control for economic differences between the two locations. However, Atlas and Cameron disagree with the Card and Kruger methodology part because they were able to examine only a short time period effect before and shortly after the change of the minimum wage, thus only captures short time period effects of the minimum wage.

Atlas and Cameron (2008) have analysis the impact of minimum wage on employment using quasi natural experiment in Indonesia by emphasis on manufacturing industries such as clothing, textiles, footwear and leather in between the year 1990 and 1996. This is because the low wage workers from manufacturing industries received low wage. They focus on Great Jakarta and Botabek.

Even though both regions are nearer to each but the regional minimum wage was significantly higher in Jakarta than in West Java, in 1990, it is a 36 percent difference in the legal minimum wage between Jakarta and Botabek (Neumark & Washer, 2006). Once the difference was recognized, by 1994 the provincial government implement similar minimum wage between Jakarta and Botabek, The researchers used difference in difference estimator to analysis the effects of minimum wage in Jakarta and Botabek of small and large domestic, and large foreign firms. The researchers believe that different costs structure across these categories may get different results in minimum wage effects (Neumark & Washer, 2006).

Through the analysis they find that, for the large firms are insignificant. Furthermore, for the large foreign firms is insignificant while for large domestic firms could not be concluded because there some negative and positive estimators (Neumark & Washer, 2006). For smaller firms the overall employment effects are negative, even there is a high employment growth in Jakarta in this period. As Atlas and Cameron (2008) conclude that the unemployments effects in Jakarta and Botabek is not very large. Indonesia minimum wage has set according to the region. However in Malaysia, minimum wage sets similar overall in Malaysia to prevent migrations of workers focus to one region.

In China Wang and Gundersen (2011) used difference in difference estimator to analysis employment effects of the minimum wage increase in the overall labor market. They find that the difference in difference estimator is -0.15 indicating that employment growth was slower in the region that raised their minimum wage relative to those that did not raise the minimum wage. However, the effect is statistically insignificant and the impact is extremely small. For instance, amounting to 42 lost jobs per 10,000 in the working population. The impacts are particularly small in retail, wholesale trade and restaurant industries. They concluded that through empirical evidence, minimum wage increase in China has an insignificant impact on employment.

Rani and Balser (2012), analysis the effectiveness of minimum wage in India through using employment and unemployment survey 2009-2010. India is the first developing country which imposed minimum wage. India is a country which has multiple minimum wage rates, which differ across states as well as across jobs within a state. There are 48 minimum wage rates which were set by Central Government of India according to job categories among the sector.

According to Saget (2001) majority states in India have been paying workers a cost of living allowance to compensate for inflation because the minimum wage in India is not regularly adjusted to price increase. Saget (2001) mentions that Annanth and Sundaram (1998) find that in half of the major India States the result of minimum wage decreased in real terms between 1983 and 1988 and increased between 1988 and 1994 in most states. From year 2009 to 2010 using employment-unemployment survey shows that, 400 million persons employed in India. They find that, 15.4% of salaried workers and 40.9% of casual workers

earned less than the indicative nominal minimum wage of RS80 per day and this figure increases to 22.2% and 48.6%, respectively, when they use proxy for state level minimum wage.

In the Malaysian labor market, the minimum wage is still new and it is not surprising that to my knowledge, there are no empirical studies on the effects of minimum wage. The present study will further examine the effects of minimum wage on employment, hour works and happiness.

According to Lee (2012) there is countries that implemented a minimum wage have strong empirical evidence which tend to see a significant effect on wage and small negative employment effects covered by minimum wage legislation. The important element of the insignificance of the minimum wage on employments is depends on debate in the country and most likely it is subjected to the category of the jobs, place of working and also the time.

The National Wage Consultative Council and Ministry of the Human Resource Malaysia have conducted a survey and find that if the minimum wage set at RM900 per month and above and under monopsony and competitive models, over the next four years (2012-2015) minimum wage predict to reduce the demand for migrant workers by 0.4-6.1%. In additional, in year 2012 until 2014, under perfectly competitive market, the minimum wage of RM900 per month is estimated to increase the unemployment rate in the countries by an average 0.4%.

In Malaysia, according to the annual report of the Central Bank of Malaysia (2013) a survey has been conducted in May 2012 on 232 firms and finds that effects of minimum wage still

can be manageable. More than 90% firms are affected by the implementations of minimum wage. The firms indicated that, the firms would not dismiss the workers in response to the policy. However, there are 25% of firms indicated that they will reduce the workers impact of the minimum wage legislation. In spite of that, firms also indicated that they will increase training to enhance labor efficiency and almost 50% firms plan to do so. Thus, the surveys show that, the firms will be able to manage to minimum wage policy at the aggregate level without undergoing any economics disruptions with several adjustments. The minimum wage should not have adverse impacts on employment in Malaysia.

2.3.2 Effects of Minimum Wage on Hours Work

Most of the studies on the effect of the minimum wage are focused mainly on employment. There are several suggestions from Zavodny (1996) that employers may reduce hours of work rather than reduce the number of employees.

First in short run particular, it might simple for firms to adjust hours than employment. Waiting for natural attrition to reduce the employment level takes time and dismiss workers may lower the morale of retained workers.

Based on Zavodny (1996), it is shown that 10 percent increase in minimum wage is correlated with a 1.7 percent increase in hours per week. This effect is qualitatively small; the sample average is about 26 hours per week, so a 20 percent increase in the minimum wage would raise average hours among employed workers by less than an hour a week (Zavodny, 1996). Gindling and Terrell (2004) finds that 10% increase in the minimum wage

in Costa Rica, reduce the average number of hours worked employee who still working in covered sector by 0.6%.

As suggested by Steward and Swaffield (2004, p. 3) “In the long run a firm’s choice of worker’s working hour is mixed and depends on the level of the fixed costs of employment, the technology and productivity hour’s schedule, the labor supply scheduled faced and many more”. Nevertheless, as Steward and Swaffield (2004) noted, Hamermesh (1993) says that “employers are quicker to make adjustment to hours of work in response to shocks than they are to change levels of employment”.

Stewart and Swaffield (2004), the most familiar tactics take in by employers wishing to keep away paying the minimum wage is by reducing hours of work. According to the Stewart and Swaffield (2004), Brown (1999) says that the evidence from time series data has recommended that “when minimum wage increase, hours per week will decline, thus the effect on hours worked is more identifiable that the effects on bodies employed”.

Zavodny (2000) finds that teens who primarily earn a subminimum wage than the new minimum wage (affected workers) undergo a reduction in working hours compared to the teens who primarily earn more than the new minimum wage and also to teens who do not uncovered by a minimum wage increase.

Stewart and Swaffield (2004) analysis the effects of the introduction of the United Kingdom minimum wage on the working hours of low wage workers using the difference estimator with and without propensity score matching (probability of receiving treatment). He used

individual level longitudinal data from two national data sets such as New Earnings survey (NES) and the Labor force Surveys (LFS).

Stewart and Swaffield (2004) tried to address is “*what would have been the change in the working hours of employee directly affected by the minimum wage if the minimum wage had not been introduced and are observed change in hours for this group significant different from this*”.

They used difference in difference estimate, propensity score and lagged effects to estimate the result. As a result of the introduction of the minimum wage, through the analysis they find that the estimate a total effect (initial plus lugged) of 1.5 hours, indicate a lagged effect of a decline in total paid hours of about 1.8 hours per week.

The lagged effects after the minimum wage introduction on basic hours for men but it is insignificant and compared to large in scale indicating a change in hours for the affected group of 2.5 hours less than that of the comparison group.

In basic hours for both men and women, indicates a reduction between 1 and 2 hours per week and it has been found alike for total paid hours the NES total effects estimates has been indicated. For men, the LFS estimated total effects on basic hours are greater; however lower for women, but in both cases with decline precision. Stewart and Swaffield (2004) conclude that, for low wage workers (both male and female) implementation of minimum wage cause a reduction in the paid in working hours.

Through the literature review some studies have found the reduction in hours of work and some found ambiguously. Thus, conclude that, it depends on employers to make adjustments and depends on the sample that used by the empirical studies.

2.2.3 Effects of Minimum Wage on Happiness

Most economists say that higher income directly leads to higher happiness. Thereby, they support, a higher income enlarges individuals and countries prospect set; that is, consumption level will increase (Frey & Stutzer, 2002). However, a small portion of economists does not support the idea that higher income leads to higher happiness. The first economist to put efforts and study on the data of happiness is Richard Easterlin (1974), and he concluded that “money does not buy happiness” (Frey & Stutzer, 2002).

The higher the income, the more secure human rights, the good conditions of average health is, and equal distribution of income. The human rights regime, health and distributional equality may seemingly make happiness increase in income (Frey & Stutzer, 2002). One of the reasons to a lead in income increase is happy people may be more creative and enterprising.

There is evidence across nations allows us to conclude that, income and happiness have a positive relationship and the higher income increases people’s subjective wellbeing in poor or less developed countries. The idea that people in less developed countries are happier because they continue their rest of life under more “simple” or peaceful and having less stressful conditions can be considered a myth (Frey & Stutzer, 2002). Bentham (1798) the economists beginning, has correctly seen that options to the population that the poorer

people must forgo, at least up to a certain threshold and that higher income offers welcome opportunities (Frey & Stutzer, 2002).

Stevenson and Wolfer (2013) examine the connection between well-being and income. In the United States, and the survey was from the Gallup poll conducted on December 6-9, 2007. The researchers examine these data more formally in regressions and they find that there is no evidence of a significant relationship with either the happiness-income, nor in the life satisfaction income relationship, even people who earn more than \$ 500,000. However, the researchers used cross tab and analysis happiness and income and finds that those who earn more than \$500,000 tend to be very happy and very satisfied.

Accomplish more and more, the desire adjustment of the human beings, and they are never satisfied. Once an individual has achieved their desire, they want to achieve even more, the more one gets, the more one wants. For example as long as one has a yearly income of \$50,000 an income of \$100,000 seems a lot. However, as soon as one has achieved it, one craves \$200,000. The expected marginal utility of income does not seem to decrease much if at all.

In United States empirical evidence shows that, the individual classified and considering themselves to be “very happy” for those with income below \$10000, rises from 16% to 44% for those with incomes above \$75,000. Conversely, a decline from 23 to 6 percent for those classified themselves to be “not too happy”. For those with incomes below \$10,000, the mean happiness rating rise from 1.8 to 2.8 for those with incomes above \$ 75,000.

There are many reasons why higher income does not simply convert into higher happiness. This is because individuals compare themselves to other persons. In the case, the level of

income that matter most, however instead of one's position compare to other people. According to Frey and Stutzer (2002), he mentions that Easterlin (1975,1999) acknowledges comparison to others, individuals with higher income are, on average, happier however raising everyone's income does not increase everyone's happiness, because income has not moved up.

In spite of employment and hour works, the level of happiness of workers also plays an important role in the labor market. For instance, people in developed countries (high income) are clearly happier than are those in less developed (low income) countries. This significant relationship is especially strong with countries below a GNI per capita of US\$10000 (Frey and Stutzer, 2002). However in Malaysia the GNI per capita year 2012 is US\$ 9800 per capita (World Bank, 2012). It is shown that, we might have an insignificant relationship between happiness and income.

According to the World happiest countries in year 2013, Malaysia was ranked in 56th place, the reason might be because our country consists of lower wage workers, and thus increases in the minimum wage might lead to higher happiness. Furthermore, Malaysia Happy Planet Index (HPI) score is 40.5 and was ranked in 84th place over 151 countries. In my opinion, the government of Malaysia should emphasis on happiness index because it is can measure the true well being of the nation, Thus empirical studies and continues research is needed.

There are many poor or less developing countries at the lower end of the scale, and transition countries where peoples experience low satisfaction or unhappy with life. But these are also some unusual countries with low per capita income that report reasonably high average

satisfaction or happy scores. Thus, the relationship between happiness and per capita income across countries are complicated (Frey & Stutzer, 2002).

This study differs from previous research in several ways. The panel data (observed individuals over time 2 periods and extend to 3 periods). This is the first study in Malaysia on the effects of minimum wage on employment, hour works and happiness. This study also extends to analysis “happiness” in study of minimum wage on my knowledge, never been discussed in any other, minimum wage research.

2.2.4 Lagged Effects of Minimum Wage

There is some question arise, after the implementation of minimum wage how long it should take to see the full effect on employment? Once the minimum wage imposed the changes in the minimum wage should be felt relatively in the short term and it is being believed by many economists.

As Neumark and Washer (2006) noted that, Brown et al. (1982) on their views says that minimum wage workers likely to have high turnover rates recommended that the preferred adoption in employment level could be accomplished somewhat quickly through usual turnover. In addition, employers should be well prepared in advance to make adjustment when (or even before) the new law takes effect because the increase in the minimum wage are announced earlier several months in advance of when the law come into operation (Neumark & Washer, 2006). For instance, Neumark and Washer (1992) find that positive employment effects from their time series panel of state level data by using lagged values of the minimum wage.

According to Baker, Benjamin and Stanger (1999), they analysis the effects of minimum wage legislation in Canada over the period 1975-1993 and researchers replicating some of the United States panel data estimates for teenagers with Canadian data. They used first difference estimates to examine the minimum wage effects in Canada and finds that, the result is positive as they reported, whereas longer differences (from using the within group estimate over a longer period) and specifications with lags of the minimum wage tend to show negative employment effects that are statically significant. For instance, in their preferred specification, the first difference elasticity is 0.07 with the lagged minimum wage, while the within group elasticity is -0.27 the estimates are more similar (-0.23 and -0.47). The researchers also analysis and estimate the minimum wage elasticity's separately at high and low frequencies and the results shows that the positive effects of the minimum wage on employment at high frequencies and a negative effect of the minimum wage on employment at low frequencies. Overall, in Canada, Brown et.al report employment elasticity is - 0.25.

In Malaysia case, the government has announced minimum wage legislation earlier in the budget speech in the year 2010. Thereby the employers should make adjustments to adapt to minimum wage policy. However, there are still firms yet to comply with minimum wage legislation.

This study is expected to contribute to the labor market in Malaysia. Through the period of studies for one year, have been observing the low wage workers before and after the implementation of the minimum wage. The data collection process took twice and some sector was triple times because of the delay in the implementation of the minimum wage. 2 months before the implementations of minimum wage, 2 to 3 months after the

implementation of minimum wage. Through the surveys finds that, most of the low wage worker's happiness as increase because of the minimum wage. Hours of work do not change much. However, in the long run we cannot predict. Thus, continuous study is important, so that the low wage workers contribute to the nation. Since, this is the first study on the effects of minimum wage in Malaysia, much time and money has spent to get a good result on this matter.

2.3 Conclusion

As general theoretical and empirical evidence shows that analysis is important to examine the impact of minimum wage. In addition, data and methodology play important role to find the significance of the study of each country, in particular, the literature suggests a panel data in accessing the effect of minimum wage. There is still a lack of studies in term of literature review of employment, hour's work and happiness in Malaysia relative to developed countries and other developing countries. In terms of happiness, as a conclusion to analysis which people are happy or unhappy is an essential quality of the economy and society. The results of happiness research tell economics policy makers which factors tend to raise or diminish people's well-being

A summary of the main studies on effect of minimum wage is presented in Appendix A.

CHAPTER 3

DATA AND METHODOLOGY

3.0 Introduction

Data and methodology used in this study are discussed in this chapter. This chapter also presents the sampling design and model specification of this thesis. In particular, the definition and measurement on dependent and independent variable are explained in details.

3.1 Sampling design

The sampling design that I used is, purposive sampling, the workers who are subjected to minimum wage are surveyed before and after implementation of minimum wage in Malaysia.

3.1.1 Target Population

The targeted population in this study is low wage workers from Kedah. Minimum wage is designed for the lower wage workers and thus, they are the targeted population.

The following categories of low wage workers are the targeted population, according to *the Malaysia Standard Classification of Occupation 2008*; they are the elementary workers from the categories of:

Table 3.1: Elementary occupation

Job classifications	Job descriptions
Cleaners and helpers	<p>Sweepers and related laborers, refuse workers, cleaners and helpers in office, sweeping or vacuum cleaning, washing and polishing the floor and gardens.</p> <p>Refuse workers and other elemental workers. Collect garbage from buildings, yards, streets and other public place, or keep streets and other public places are always clean.</p> <p>Sweepers and related laborers</p> <p>Sweepers and related laborers sweeps and clean streets, parks, schools, airport, station and other public places.</p> <p>Garden</p> <p>Perform a variety of simple gardening tasks such as planting flowers, cutting laws using hand mover and performing related tasks.</p>
Protective services workers (Security guards)	<p>The task is admitting employees and authorized person and refusing entrance to unauthorized persons.</p> <p>Patrolling in and around the premises for unauthorized entry and performing related tasks.</p>
Bus drivers	-
Manufacturing laborers	<p>Performs simple and routine tasks related to manufacturing which requires the use of simple hand held tools and mainly used a lot of physical energy.</p> <p>Hand packers</p> <p>Perform a variety of simple routine tasks related to manufacturing sector such as</p>

	<p>product sorting, hand packing and simple hand assembling of components</p> <p>Manufacturing laborers not elsewhere classified</p> <p>Caring out manual sorting of products or components</p> <p>Packing materials or product by hand in boxes, bags, and other containers for shipment or storage.</p>
Retail	<p>Shelves Filters</p> <p>Stock shelves and display areas and keep stock clean and in order in supermarkets or other retail and wholesale shops.</p> <p>A particular duty which is included is placing goods neatly in bins and on roads and stocking bulky goods on floors, Filling shelves with goods ensuring goods with the earliest use by date are at in front of shelves and performing related tasks.</p>

3.1.2 Sampling Method

The sampling method that was used is purposive sampling, to obtain information from a specific group. The sampling method's narrowed to a particular type of people who willing to share information, either because they are the only ones who are in the specific field, or conform to some criteria set by researchers (Sekaran & Bougie, 2012). This justifies the use of purposive sampling in the present study because it is only the low wage worker can provide information on the impact of minimum wage.

Purposive sampling is non-probability sampling has only a very limited level of generalizability. However, due to the resource constraint, this study is not able to use a probability sampling (which is time consuming and costly). Furthermore, this study is aimed

examining the effect of minimum wage at exploratory level and thus, purposive sampling should be a justifiable sampling design.

3.1.3 Data collection method

In this study survey method (i.e. self-administered questionnaires with interview) was selected as a data collection method. I choose this method because it is an effective way to collect large amounts of structured data. The advantage of face to face interviews has provided rich data, offers the chances to start up rapport with the interviewees, and helps to review and understand difficult issues. Moreover, majority ideas ordinarily difficult to articulate can also be brought to the surface and discussed during such interviews (Sekaran & Bougie, 2012). I used telephone interviews also because it is helping to contact subjects, and it is not an easy to find the same person for the second time, contact through telephone obtains immediate responses from them. This is a practical way of collecting data when one has a particular question to ask, wants the responses quickly.

The employees respond to questionnaires at their workplace with permission of their employers. The questionnaire distributed to the workers which is affected by the implementation of minimum wage. The information obtained is confidential.

3.1.4 Questionnaire

Questionnaire in this survey divided into three sections: Section I, Section II, and Section III which is asking about the respondent's profile, employment and minimum wages and happiness level of employees respectively.

In the first survey (before implementation of minimum wage, November 2012), a total of 101 respondents were interviewed in their working place. 101 respondents appear to be not a large sample size however according to Sekaran and Bougie (2012) as a rule of thumb for determining the sample size is larger than 30 and less than 500 are suitable for most research. In the second survey (after implementation of minimum wage, February-March 2013), the 101 respondents are contacted through phone or in their working places. Six respondents are attired in the second survey and a total of 95 respondents successfully surveyed. In the third survey (after implementation of minimum wage, September 2013), the 95 respondents were contacted again and two of them are attired. The date of data collection started from 16th November 2012 (before the implementation of minimum wage) and second survey started on 28th February 2013 until 25th March 2013. The third survey was conducted on 6th September until 25th September 2013, 51 of the respondents were surveyed and two of them attired. In third survey, emphasis on cleaning sector due to delay on the implementation of minimum wage. Thus, the duration of minimum wage implementation is 12 months.

3.1.5 Pilot Test

The questionnaire was administered to one of the low wage workers from cleaning sector as a pilot test on 16th November 2012. The main objective of this pilot test is to ensure that the questionnaires are readable, questionnaire designed correctly and for practicality.

Since the questionnaire was used to face to face interview and through telephone surveys, and those workers are less educated thus it is reasonable to assume that Bahasa Malaysia is the best medium of language. It is expected that the low wage workers should not have any problem with understanding “Bahasa Malaysia” or Malay language because it is a national language. After the pilot test questions were improved. For question number 14, employee’s wage divided into four sections such as basic salary, allowance, overtime and others.

Since, the respondents are less educated, Malay language used as a medium to communicate. All of them understand and comfortable because Malay language is the national language.

3.1.6 Data Screening

This was done on 30th August 2013. This is to minimize the typing error during data entering (into SPSS) and STATA has been used to analysis the model. Several mistakes have been identified and rectified. Then, the data is used for analysis.

3.2 Methodology.

Based on the literature review, the following framework could be formatted for impact of minimum wage (Figure 3.1):

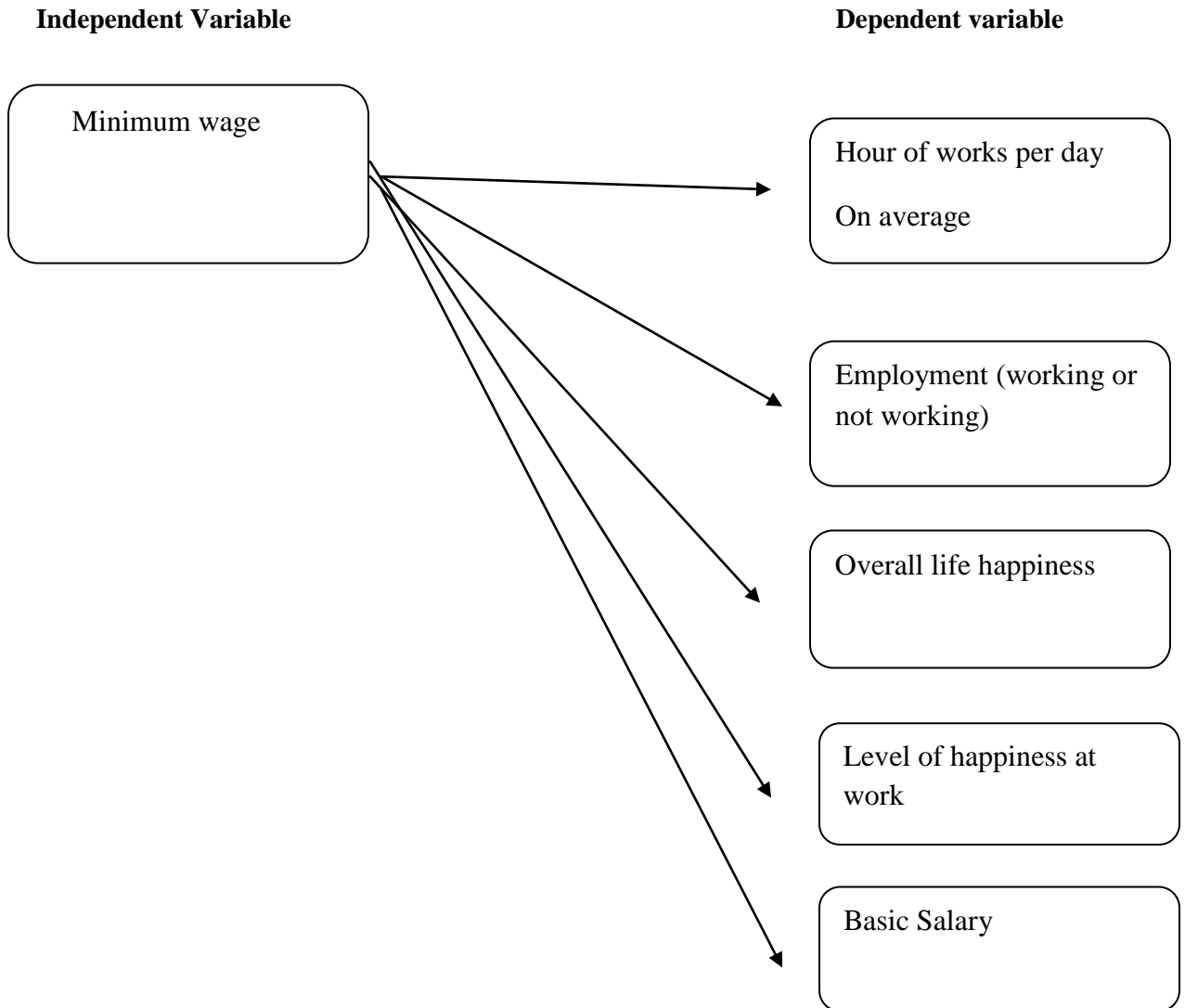


Figure 3.1: Impact of minimum wage

Empirically, the impact of the minimum wage could be estimated using the econometric modeling. In this analysis will use panel data where the data are collected at different points in time. I use the pooled regression to estimate the impact of minimum wage.

However, according to Wooldridge (2013), using this method can be biased. It is suggested that the difference-in-difference estimator to analysis the panel data. The control group 'C' means those who are not affected by minimum wage, and 'T' is the treatment group, those who are affected by minimum wage. Allowing dT equal unity for those in the treatment group T, and otherwise zero, will capture the treatment and control group information.

This difference in difference estimator also known as natural experiment or quasi experiment approach. I choose this difference in difference estimator because it is frequently used to evaluate the effects of government policy. Often governmental policy affects one group of people, while it does not affect other group of people. This type of policy change is called the "natural experiment". The group of people who are affected by the policy is called the "treatment group". Those who are not affected by the policy are called the "control group".

The panel data sets in particular are very useful for the policy analysis and program reevaluation. In the simplest program reevaluation setup, a sample of individuals is obtained in the first period (Wooldridge, 2013).

However, due to the resource limitations, the control group might not available in a sufficient number and matched characteristics, in this case, the difference in difference

estimator may not be feasible. The alternate method will be the difference estimator, or the fixed effects estimator.

3.2.1 Fixed effects model

Fixed effects design to study the causes within a person. Fixed effects are eliminated unobserved effects and unbiased estimator.

Unobserved effects model:

$$Y_{it} = \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_K X_{itK} + a_i + U_i \dots \dots \dots (1)$$

Where;

Y_{it} = Hours of work per day on average or Basic Salary or Employments or Overall life happiness and Level of happiness at work.

X_1 = Minimum wage = 1 if survey 2 and survey 3; 0 if survey 1

X_2 = Gender

X_3 = Skills

X_4 = Low wage workers of educational level

X_5 = Number of children

X_6 = Malay Citizen

X_7 = Contract

X_8 = Full time

X_9 = Changes in hours of work

The average this equation is;

$$\bar{Y}_{it} = \beta_1 \bar{X}_{1it} + \beta_2 \bar{X}_{2it} + \beta_K \bar{X}_{itK} + a_i + \bar{U}_i \dots \dots \dots (2)$$

Subtract the equation (1) and (2) for each t

$$y_{it} - \bar{y} = \beta_1 (x_{it} - \bar{x}_i) + u_{it} - \bar{u}_i \dots \dots \dots (3)$$

This is the fixed effects model.

3.2.2 Dependent and Independent Variables

In this study the dependent variable is employment, hour of works, basic salary and happiness. Their definitions and measurements are as presented in Table 3.1. The independent variables including the dummy variables which capture the implementation of minimum wage and other socio-demographic variables (see Table 3.1 for their definitions and measurements)

Table 3.2: Dependent and Independent Variable.

Dependent/ Independent Variable	Definition	Measurement
Hours of work	Hours of work per day on average	Direct measure with ratio scale
Wage	Basic salary per month	Direct measure with ratio scale
Life Happiness	Overall life happiness	Ordinal Scale: 1 to 5 with 1 being “not happy at all” and 5 being “Very happy
Working happiness	Happiness level at work	Ordinal Scale: 1 to 5 with 1 being “not happy at all” and 5 being “Very happy
Gender	Employees Gender	Nominal Scale: 0=women,1= men
Age	Employees Age	Direct measure with ratio scale
Ethnic	Race of employees	Nominal Scale: 1=Malay,2=Chinese 3=India, 4=others
Marital	Marital status of employees	Nominal Scale: 1=Not married, 2=married,3=Windower,4=divorce, 5=Separated
Children	The number of children of employees	Direct measure with ratio scale
Education	Employee’s educational level	Nominal Scale: 1= Did not go to school at all 2= Non formal education 3= Not complete primary school 4= Complete primary school 5= Not complete high school 6= Complete high school 7= PMR 8= SPM 9= STPM 10= A-level 11= Certificate 12= Diploma

Employment Status	Type of jobs	Nominal Scale: 1= Full time 2= Part time 3= Others
Type of works	Type of status	Nominal Scale: 1= Contract 2= Permanent 3= Part Time
Skills	Type of skills	Nominal Scale: 1= no 2= low 3= modest 4= high
Position	Employee's position	Nominal Scale: 1= Cleaning 2= Bus drivers 3= Security guards 4= Manufacturing 5= Retailers
Activities	Employee's main activities	Nominal Scale: 1= Wash toilets, sweep and dumpster 2= Clean the overall university area 3= Sweep and clean office area 4= Clean the food court 5= Clean the building using vacuum 6= Cleaning and gardening 7= Wash toilets, sweep, dumpster and pop floor 8= Clean the area of mosque 9= Pick and send off the students to the study place 10= Cashier

		11= Arrange the goods and assists customer 12= Sales CD 13= Operate the machine 14= Packing (goods) 15= Arrange and check the stocks 16= Patrol the schools 17= Keep the gate 18= Patrol the hostel 19= Patrol the study place 20= Security guard and Wayering Nominal Scale: 1= Provide cleaning service 2= Provide transportation 3= Provide security to the study place 4= Manufacturing and supply frozen foods 5= Supplying consumption goods.
Company	Companies main activities	
Working day	Employees workings day per day	Direct measure with ratio scale
Minimum wage and hours works	Changes in hours worked	Nominal Scale: 1= Unchanged 2= Increased slightly 3= Increased 4= Increase a lot 5= Decrease slightly 6=Decrease 7= Decrease a lot
Supports	Employees support towards minimum wage.	Ordinal scale: 1 to 5 with 1 being “extremely not support” and 5 being “strongly support”

Reason for Support/not supported	Employees supports or not supports towards minimum wage	Nominal Scale: 1= Increase in fixed income little more 2= expensive price 3= increase the income as the current income not enough 4= Very low salary 5= High workload 6= Standard of living raise 7= Reduce the burden 8= Cost of living increasing 9= High expenditure 10= Number of children high 11= Support but the wage does not increase 12= Advanced in economics but the salary low 13= Costly price but the wages under poverty line 14= Single mother loadbearing 15= Not supporting because the wage does not increase and the date is delayed 16= The wage not enough to buy foods 17= Can buy essential goods 18= Scared of losing jobs 19= No need to depend on others 20= Working for long years but the wage does not increase 21= Not supporting because not much increase from previous salary. 22= Increase in salary "happy" 23= Non-working parents 24= Support if basic plus allowance 25= Support if the essential good price reduces 26= Incentive to work an increase 27= Savings 28=Support if have Over time 29= Advantage of certain parties 30= Transportation fee increase
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Losing jobs	Possibilities of losing jobs if imposed minimum wage	Nominal Scale: 1= 0%-10% 2=11%-20% 3=21%-30% 4=31%-40% 5=41%-50% 6=51%-60% 7=61%-70% 8=71%-80% 9=81%-90% 10=91%-100%
Extend a minimum wage	Knowledge on extend the date of minimum wage	Nominal Scale: 0= no 1=yes 2=not sure 3=not related
Any event influence happiness	Past 4 months any event influence employee happiness (To analysis gap between survey 1 and survey2)	Nominal Scale: 0=no 1=yes

3.3 Conclusion

In this chapter I have discussed on the target population, sampling and theoretical framework and specification model. I have chosen this sector of workers because those workers receive low wages and I believe they will likely be affected by minimum wage. Difference estimator will be used to analysis the data because the method is the most appropriate method to analysis government policy. Lastly I have presented measurement and definition of the dependent and independent variable.

CHAPTER 4

RESULTS AND ANALYSIS I: DESCRIPTIVE STATISTICS

4.0 Introduction

This chapter discusses the results of descriptive statistics. This chapter starts with descriptive statistics on the characteristics of the respondents, descriptive statistic and further analysis.

4.1 Characteristics of the respondents

Table 4.1 describes the characteristics of respondents according to their socio-demographic profile.

In survey 1, there are 101 respondents, however in survey 2 it reduce to 95 respondents, since six of the respondents attire, survey 3 emphasis on cleaning sectors only because delay in implementation of minimum wage. Survey 3 is a supplement for the survey 2. Hence, the descriptive statistic presented is merely for information purpose.

Of the total 101 respondents of survey 1, 56.4% are female and 43.6% are male. In survey 2, the percentage of females slightly increases to 58.9% and the percentage of male decrease to 41.1%. The majority respondents are Malay (61.4%) and Indian (38.6%) in survey 1 and survey 2. In survey 1, majority of the respondents are married (71.3%), followed by unmarried (15.8%), widower (11.9%) and divorce (1.0%) and in survey 2, almost similar percentage on marital status.

In survey 1, the respondents have completed their educational level of SPM is (22.8%), followed by complete primary school (20.8%), PMR (17.8%), not complete primary school (11.9%), not complete high school (10.9%), did not go to school at all is (6.9%), complete

high school (3.0%) and only (2.0%) has completed Certificate and Diploma. (1.0%) have non-formal education. In survey 2, did not go to school at all, not complete primary school and not complete high school increase to 7.4%, 12.6% and 11.6% respectively. Non-formal education, complete high school, PMR, STPM, Certificate and Diploma percentage has slightly increased, 1.1%, 3.2%, 1.1%, 2.1% and 2.1% respectively. However, complete primary school reduced to 20.0% and SPM slightly reduced to 21.1%.

In survey 1, most of the low wage workers have no schooling children (52.5%) because their children might grow up, still infants or kids. A total of (17.8%) of the low wage workers have one child who is still studying, followed by (14.9%) two children studying, three children (9.9%), four children (4.0%) and 6 children are (1.0%). In survey 2, low wage workers have no schooling children is 50.5% and it is slightly decreased. A total of 18.9% of the low wage workers have one child who is still studying, two children studying has decreased to 14.7%, three children 12.6% and four children is 3.2%.

Lastly, in survey 1 most of the low wage workers age group is 50-59 (25.74%), and in survey 2 it is increased to 27.37%, followed by 40-49 and 20-29 is (24.75%) respectively in survey 1; and in survey 2 the age group 40-49 and 20-29 decrease to 22.11%, 21.5% respectively. In survey 1 30-39 age is (17.82%) and in survey 2 is 20%. Survey 1, low wage workers over than aged 60 is (5.94%) and survey 2 is 8.42%; 16-19 is (0.99%) and in survey 2 is 1.05%.

Table 4.1 Profile of the respondents

Demographic	Survey1		Survey2		Survey 3	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Gender						
Female	57	56.4	56	58.9	42	82.4
Male	44	43.6	39	41.1	9	17.6
Ethnic						
Malay	62	61.4	58	61.1	40	78.4
Indian	39	38.6	37	38.9	11	21.6
Marital Status						
Unmarried	16	15.8	15	15.8	3	5.9
Married	72	71.3	67	70.5	37	72.5
Widower	12	11.9	12	12.6	10	19.6
Divorce	1	1.0	1	1.1	1	2.0
Educational level						
Did not go to school at all	7	6.9	7	7.4	7	13.7
Non formal education	1	1.0	1	1.1	1	2.0
Not complete primary school	12	11.9	12	12.6	9	17.6
Complete primary school	21	20.8	19	20.0	13	25.5
Not complete high school	11	10.9	11	11.6	7	13.7
Complete high school	3	3.0	3	3.2		
PMR	18	17.8	17	17.9	9	17.6
SPM	23	22.8	20	21.1	5	9.8
STPM	1	1.0	1	1.1		
Certificate	2	2.0	2	2.1		
Diploma	2	2.0	2	2.1		
Number of children still schooling						
0	53	52.5	48	50.5	24	47.1
1	18	17.8	18	18.9	12	23.5

2	15	14.9	14	14.7	6	11.8
3	10	9.9	12	12.6	6	11.8
4	4	4.0	3	3.2	3	5.9
6	1	1.0	-	-	-	-
Age						
16-19	1	0.99	1	1.05	-	
20-29	25	24.75	20	21.05	5	9.80
30-39	18	17.82	19	20	8	15.69
40-49	25	24.75	21	22.11	14	27.45
50-59	26	25.74	26	27.37	19	37.25
60 over	6	5.94	8	8.42	5	9.80

From the Table 4.2; in the survey, more than half respondents are from cleaning sector (54.5 %). In survey 2 the percentage of cleaning sector workers increase to 57.9%. This is consistent because low wage workers are mostly from cleaning sectors. In survey 1; the bus drivers respondents are (17.8 %) and it is followed by a security guard (11.9%), retail (8.9%) and manufacturing (6.9%). However in survey 2, the percentage of bus drivers, security guard, manufacturing and retail reduced to 16.8%, 10.5%, 5.3% and 9.5% respectively. In survey 3, the cleaning sector workers are 96.1%

Table 4.2 Employees Positions

Positions	Survey 1		Survey 2		Survey 3	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Cleaners	55	54.5	55	57.9	49	96.1
Bus drivers	18	17.8	16	16.8		
Security Guard	12	11.9	10	10.5		
Manufacturing	7	6.9	5	5.3		
Retail	9	8.9	9	9.5		

4.2 Labor market and other characteristics of respondents

Descriptive analysis used to examine the characteristics of employment, supports towards minimum wage, basic salary and hours of work, overall life happiness and level of happiness at work.

4.2.1 Employment

Total 101 respondents participate in the survey. In the second survey, the respondents rate drop to 95 respondents. In the second survey, 6 respondents drop from the survey, one of the workers have fired from work due to high absentees to the work, another reason is self-resignation (to take care of children), and another 5 could not reachable. In third survey, emphasis on the cleaning sector since the respondents claim that their company imposed minimum wage and it is supplementary for the survey 2, 2 out of 51 respondents are not working (both of them claimed they resigned from their job) the summary of the employment is presented in Table 4.3.

Table 4.3: Total employment

Survey/ respondents	Total employment (all)	Drop from survey	Not working/ self resign
Survey 1 (before)	101	-	-
Survey 2 (after)	95	7	-
Survey 3 (after)	51	-	2

During the period of the study, in this sample, it appears that minimum wage does not affect the employment of the workers. Thus, reduction in the number of employed is negligible and more due to other reason rather than minimum wage.

4.2.2. Supports towards Minimum Wage Implementation

From Table 4.4, it is found that before the implementation of minimum wage, most of the low wage workers strongly support the implementation of the minimum wage in Malaysia (82.2 %) and (13.9%) of them support, modestly support are (2.0%). However there is a small portion does not support the implementation of the minimum wage (slightly not support and extremely not support is (1.0%) respectively).

After the implementation of minimum wage (survey 2), slightly not supports to the minimum wage increase to (7.4%) compared to the before (survey 1) the implementation of minimum wage (1.0%). This is because the delay and incompletion with implementation of minimum wage.

During the period of the study, the respondents who had participated in this study support the implementation of the minimum wage in Malaysia This is not surprising as the implementation of minimum wage is beneficial to them.

Table 4.4: The level of supports towards minimum wage

Level of supports	Survey 1		Survey 2		Survey 3	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Extremely not support	1	1.0	1	1.1	-	-
Slightly not support	1	1.0	7	7.4	1	2.0
Modestly support	2	2.0	2	2.1	4	7.8
Support	14	13.9	10	10.5	6	11.8
Strongly support	83	82.2	75	78.9	38	74.5

4.2.3 Basic salary of the low wage workers

From the Table 4.5; (survey 1), before the implementation of the minimum wages most of the low wage workers received monthly basic salary RM500 or below (22.7%). Only a small portion of the low wage workers received more than RM851 (6.93%).

Once the minimum wage come into operation on 1st January 2013, in survey 2, it is found that around (20%) of the low wage workers received minimum wage RM900 (RM851-900) compared to the (1.98%) before minimum wage. In survey 3, the entire cleaning sector respondent received the wage of RM900.

Thus, the implementation of minimum wage increase the wage of workers, however, there is still a significant portion of workers who are receiving basic salary which is less than the minimum wage, as shown in survey 2

Table 4.5: The basic salary of low wage workers as before and after implementation of the minimum wage.

Basic salary (RM)	Survey 1		Survey 2		Survey 3	
	(n)	(%)	(n)	(%)	(n)	(%)
Below <500	23	22.77	19	20	n.a	
501-550	15	14.85	11	11.58	n.a	
551-600	13	12.87	15	15.78	n.a	
601-650	12	11.88	3	3.16	n.a	
651-700	9	8.91	6	6.32	n.a	
701-750	1	0.99	4	4.21	n.a	
751-800	14	13.86	7	7.37	n.a	
801-850	7	6.93	4	4.21	n.a	
851-900	2	1.98	19	20	49	100
901-950	1	0.99	2	2.11	n.a	
951-1000	2	1.98	2	2.11	n.a	
More than 1000	2	1.98	3	3.16	n.a	

4.2.4 Hours of Work

From the Table 4.6; before the implementation of minimum wage, half of the respondent's hour of work per day on average, is 7.5 hours (49.5%). The second highest is 8 hours of work on average is (29.7%). There are (18.8%) of low wage workers who works for 12 hours per day on average. One of the respondents work for 4 hours (part time basis) and 15 hours is (1.0%) respectively.

After the implementation of minimum wage majority still works 7.5 hours (50.5%) and the second highest is 8 hours (33.7%), followed by 12 hours (11.6%), 9 hours is (2.1%) and 4 and 6 hours is (1.1%) respectively. Compared to the survey 1 and survey 2, there are reduction in working hours, for example in survey 1, 12 hours is (18.8%) however in survey 2 it is reduced to (11.6%). The mean of hours of work per day on average reduce.

In survey 3, entire cleaning sector works 7.5 hours per day on average.

Table 4.6: Hours of Work per Day on Average

Hours of work	Survey 1		Survey 2		Survey 3	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
4	1	1.0	1	1.1	-	-
6	-	-	1	1.1	-	-
7.5	50	49.5	48	50.5	49	96.1
8	30	29.7	32	33.7	-	-
9	-	-	2	2.1	-	-
12	19	18.8	11	11.6	-	-
15	1	1.0	-	-	-	-
Mean	8.53		8.16		7.50	

4.2.5 Overall Life Happiness

Within the economy, there are three major influences on happiness which consists of income, unemployment and inflation. Since income is one of the main happiness of people, increase in the minimum wage might lead to increase in overall happiness of low wage workers because they still employed.

Refer to Table 4.7; before the implementation of minimum wage there are (42.6%) of respondents are either happy or unhappy (neutral) with their overall life; it is followed by very happy consists of (24.8%), little happy (22.8%) and not so happy (9.9%).

After implementation of minimum wage majority respondents are either happy or unhappy (neutral) with their overall life (31.6%), followed by very happy (28.4%), little happy (25.3%) and not so happy is (14.7%).

In survey 3, entire cleaning sector respondents are little happy or very happy is consists of (41.2%) respectively, followed by happy and unhappy is (9.8%) and not so happy is (3.9%).

Table 4.7: Overall Life Happiness

Level of happiness	Survey 1		Survey 2		Survey 3	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Not so happy	10	9.9	14	14.7	2	3.9
Neutral	43	42.6	30	31.6	5	9.8
Little happy	23	22.8	24	25.3	21	41.2
Very happy	25	24.8	27	28.4	21	41.2

Refer to Table 4.8; In the first survey, the mean of overall happiness in life is 3.62 and in the second survey the overall happiness with life increase 0.05 points and the mean is (3.67 which is above the interval of point 3 in the 5- point rating scale), and the third survey the

mean of the overall happiness life is 4.24 which increase at 0.57 points. Figure 4.1 depicts this change of overall life happiness.

Clearly, the overall life happiness increase after implementation of minimum wage.

Table 4.8: Overall Life Happiness (Mean)

Happiness/ Mean and STD	Mean	Standard deviation
First survey	3.62	0.971
Second survey	3.67	1.046
Third Survey	4.24	0.804

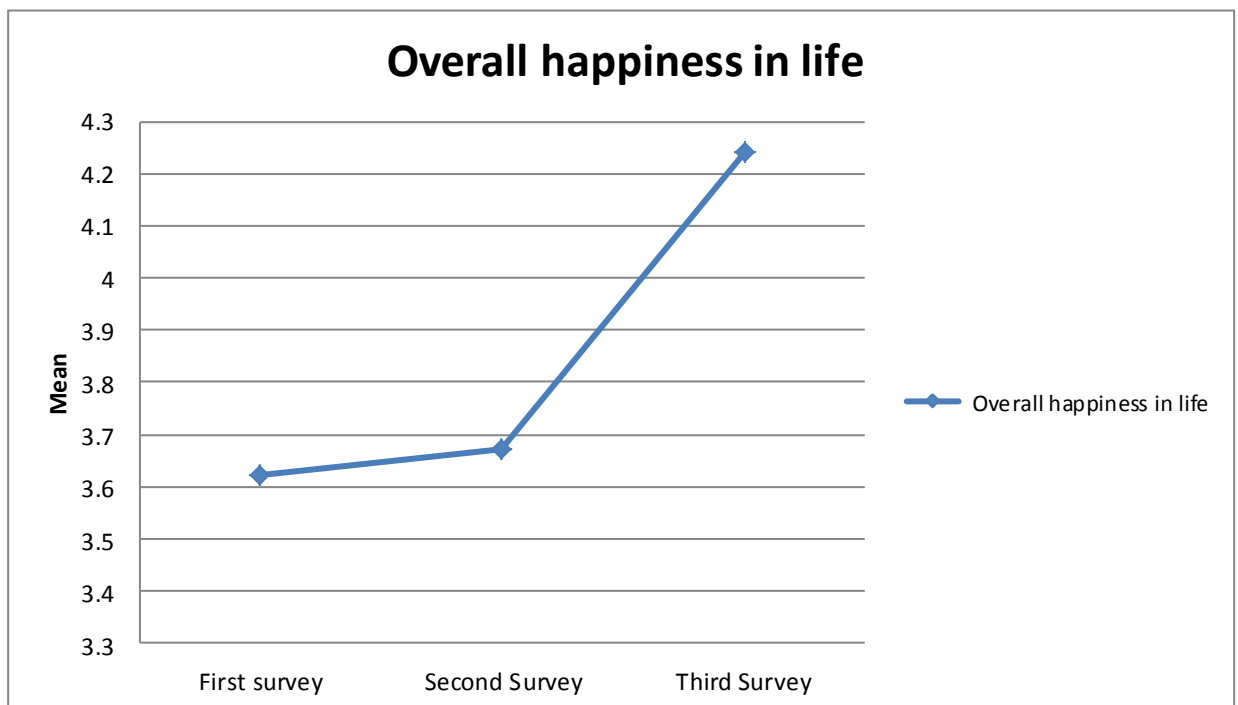


Figure 4.1: Graph on Overall happiness in life and the mean of the overall life

4.2.6 Level of happiness at work

Happiness at work has been separated from the overall happiness because low wage workers might happy with overall happiness because income increase, but increase in income might change working environment such as reduce lunch hour as we found, thus it is important to separate happiness at work from overall happiness.

Refer to Table 4.9; Before the implementation of minimum wage (survey1) majority of low wage workers happy and unhappy (neutral) with their working life (31.7%), followed by very happy and little happy not happy at all is (41.6%), (22.8%) and (1.0%) respectively.

However, after the implementation of minimum wage there are (40%) of the respondents little happy at work, followed by (30.5%), happy or unhappy (neutral) is (24.2%). Only a small portion of the respondent is not so happy at work place (5.3%).

In survey 3, most of the cleaning sector respondents are little happy at work (49.0%), followed by very happy (35.3%), neutral (unhappy or happy) and not so happy is (7.8%), (3.9%) respectively.

Table 4.9: Level of Happiness at Work

Happiness at work	Survey 1		Survey 2		Survey 3	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Not happy at all	1	1.0	-	-	-	-
Not so happy	3	3.0	5	5.3	2	3.9
Neutral	32	31.7	23	24.2	4	7.8
Little happy	23	22.8	38	40.0	25	49.0
Very happy	42	41.6	29	30.5	18	35.3

Table 4.10 present the mean values of the happiness at work. It is found that the low wage workers are quite happy in their work. By survey, in the first survey, it shows that the

workers are quite happy in the work with the mean of 4.01, however in the second survey their happiness level at work decrease 0.05 points to the mean of 3.96, in the third survey, only focus on the cleaning. Furthermore, the happiness level at work for the most of the low wage worker’s happiness has increased 0.24 points and the mean is 4.20. Figure 4.2 depicts this change of happiness at work over the three surveys. Clearly, the happiness at work show increase trend after the minimum wage is implemented

Table 4.10: Happiness at Work (Mean)

Happiness/ Mean and STD	Mean	Standard deviation
First survey	4.01	0.874
Second survey	3.96	0.763
Third Survey	4.20	0.895

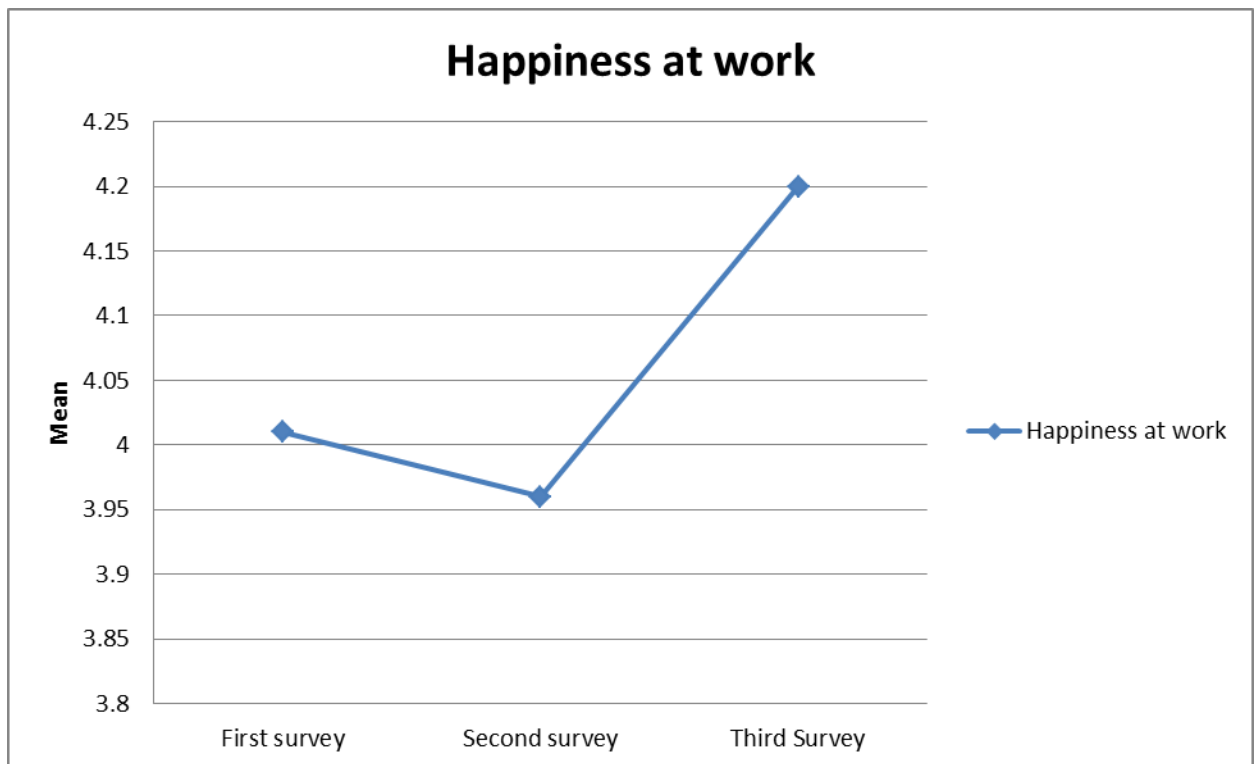


Figure 4.2: Graph on happiness at work and the mean of happiness at work

4.3 Further analysis

From table 4.11, Respondents were asked about the implementation of the minimum wage of the company. There are 2.1% and 6.3% women and men respectively have mentioned that their companies have not postponed the date of minimum wage. There are 30.8 % and 6.3 % women and men respectively mention that their company has postponed the implementation of the minimum wage and will implement the minimum wage near future. The minimum wage should be implemented on the 1st January 2013; however the cleaning sector has postponed the implementation of minimum wage on 1st July 2013. Thus, third survey has to be conducted. 2.1 % of women and 1.4% of men not sure whether the company postpone the implementation of minimum wage. 31.5% and 28% of women and men's company has implemented the minimum wage on 1st January 2013 and 1st July of 2013.

Table 4.11: Implementation of minimum wage

Gender/ expand the date of implementing minimum wage	No	Yes	Not sure	Not related
Women	3	44	3	45
Percentage (%) (women)	2.1	30.8	2.1	31.5
Men	9	9	2	28
Percentage (%) (men)	6.3	6.3	1.4	19.6

4.4 Conclusion

During the period of study, by descriptive statistics, it is found that the minimum has almost no impact on employment; a positive impact on basic salary although there are still some; an hour's work; and a positive impact on happiness either at work or overall life. In compliance or delay in implementation of the minimum wage legislation.

CHAPTER 5

RESULTS AND ANALYSIS II: MODELING

5.0 Introduction

This chapter also discusses about various tests for goodness of fit for the estimated models including multicollinearity and heteroskedastic. This chapter consists of three parts: basic model analysis, complete model analysis and conclusion

5.1 Basic Model

From table 5.1, There are four dependent variables which represent the variables where the minimum wage should have an impact on low wage worker is hours work, basic salary, happiness at work and happiness of overall life. The employment is omitted due to the low variation as shown in Chapter 4 before. The independent variable in the basic model consists only a dummy variable which represents the implementation of minimum wage (value of one if survey 2 and 3; zero if survey 1). The other independent variables are omitted and will be included in the complete model.

Implementation of minimum wage legislation has reduced hours of work per day on average. After implementation of minimum wage, the hours worked has reduced by 0.26 hours per day. This reduction is significant with p-value of 0.032, which means, the variable minimum wage has significant influence on hours of work.

Implementation of minimum wage also increases the basic salary of the low wage workers by amount of RM110.80 per month. The p value is 0.000 which means, the variable minimum wage has significant increase the basic salary of workers.

Implementation of the minimum wage has increased overall life happiness of low wage workers by 0.25 units (from a 5-point Likert scale). The p values are 0.044 which means, the variable minimum wage has significant influence on overall life happiness.

Implementation of the minimum wage has increased happiness level of workers at working place 0.05%, however the p value is 0.649 and it is not significant.

Overall the fixed effects of the dependent variable are significant. The overall statistic for the independent variable are significant except for the happiness level at work.

Table 5.1: Difference estimator (fixed effects panel model)

Dependent variable/ Independent variable	Hours of work per day on average		Basic salary		Overall life happiness		Happiness level at work	
	Coeff	P/ t	Coeff	P/ t	Coeff	P/ t	Coeff	P/t
Minimum wage	-0.260	0.032	110.808	0.000	0.249	0.044	0.051	0.649
Constant	8.311	0.000	652.768	0.000	3.616	0.000	0.399	0.000
Summary Statistic								
ai (fixed effects)	0.0000		0.0000		0.0195		0.0348	
Overall statistic	0.0316		0.0000		0.0437		0.6494	

Note: Coeff = Coefficients; P/t= P value

The table 5.2 shows the impact of minimum wage for hours worked, basic salary, happiness at work and overall happiness in life using a random effect model.

Implementation of minimum wage legislation has reduced hours of work per day on average. After implementation of minimum wage, the hours worked has reduced by 0.330 hours per day. This reduction is significant with p-value of 0.012, which means, the variable minimum wage has significant influence on hours of work.

Implementation of minimum wage also increases the basic salary of the low wage workers by the amount of RM109.90 per month. The p value is 0.000 which means, the variable minimum wage has significant increase the basic salary of workers.

Implementation of the minimum wage has increased overall life happiness of low wage workers by 0.26 units (from a 5-point Likert scale). The p values are 0.035 which means, the variable minimum wage has significant influence on overall life happiness.

Implementation of the minimum wage has increased happiness level of workers at work place 0.03%, however the p value is 0.738 and it is not significant.

It is found that the random effect model produces a similar result with the fixed effect model. Thus, using a random or fixed effect, the minimum wage is found to have significant impact on basic salary, hours of work and happiness at work.

The overall random effects of the dependent variable are significant except for the happiness at work is insignificant.

Table 5.2: Difference estimator (random effects panel model)

Dependent variable/ Independent variable	Hours of work per day on average		Basic salary		Overall life happiness		Happiness level at work	
	Coeff	P/z	Coeff	P/z	Coeff	P/z	Coeff	P/z
Minimum wage	-0.330	0.012	109.90	0.000	0.255	0.035	0.0368	0.738
Constant	8.484	0.000	654.53	0.000	3.611	0.000	4.011	0.000
Summary statistic								
Goodness of fit	0.0115		0.0000		0.0351		0.7384	

Note: Coeff = Coefficients; P/t= P value

5.2 Complete Model

In the complete model, the number of independent variables has expanded in order to control the influence of other variables while estimating the impact of minimum wage on hours work, wage and happiness. The independent variables included are gender, ethnicity, number of children, skills, contract, status of employment (full time) and worker's educational level. In this complete model, due to the time invariant variables, the fixed effect model cannot be estimated.

5.2.1 Hours Work

From the table 5.3, comparing the estimated model with control of heteroskedastic and without control heteroskedastic, the coefficients and it is significance values are not much different. For example, the coefficients of minimum wage on hours of work per day are

-0.311 without controlling of heteroskedastic and it is -0.392 with controlling of heteroscedasticity. Thus the difference with and without the heteroskedastic analysis is small. Implementation of the minimum wage has a significant and negative impact on hours of work per day on average.

Other variables which have significant impact on hours work are minimum wage, education level, ethnic group and status of employment (full time or part time). The goodness of fit for the hours of work per day on average is significant. The VIF is less than 10, thus there are no exist of multicollinearity

Table 5.3: Estimated models for Hours Work: with and without heteroscedasticity

Independent variables/ Dependent variables	Hours of work per day on average (random effects)		Hours of work per day on average (Heteroskedastic)	
	Coefficients	P- value	Coefficients	P- value
Minimum wage	-0.311	0.010	-0.392	0.031
Gender	0.289	0.348	0.125	0.650
Skills	0.207	0.180	0.347	0.042
Workers	0.127	0.037	0.101	0.040
educational level				
Number of children	-0.084	0.424	-0.073	0.301
dMalay	-0.755	0.006	-0.672	0.004
dcontract	0.099	0.695	0.170	0.421
dfulltime	3.586	0.000	3.527	0.000
dnochangehr	0.041	0.849	0.011	0.964
Summary Statistic				
Goodness of fit		0.000		0.000
VIF high/ small value	2.16	1.02		

5.2.2 Basic salary

From the table 5.4, the independent variable minimum wage has significant impact on basic salary, either in model with or without control for heteroscedasticity. The p value for minimum wage is almost zero (0.000). The hypothesis of no relationship between minimum wage and basic salary is rejected at the 1 % significance level. The relationship between and basic salary is significant. There are positive relationship between minimum wage and basic salary. The independent variable gender, number of children, ethnic, type of work (contract) and changes in hours work due to implementation of minimum wage is insignificant. On the other hand, minimum wage, education level, skills and status of employment (full time) have significant impacts on the basic salary. The goodness of fit for basic salary is significant.

Table 5.4: Estimated models for Basic Salary: with and without heteroscedasticity

Independent variables/ Dependent variables	Basic Salary (random effects)		Basic Salary (Heteroskedastic)	
	Coefficients	P- value	Coefficients	P- value
Minimum wage	104.751	0.000	106.362	0.000
Gender	8.800	0.832	3.313	0.916
Skills	55.232	0.009	54.822	0.000
Workers educational level	-24.850	0.002	-23.201	0.000
Number of children	7.484	0.597	5.219	0.640
dMalay	59.106	0.105	55.109	0.055
dcontract	-6.171	0.860	-9.990	0.769
dfulltime	418.801	0.004	351.431	0.000
Dnochangehr	-29.000	0.385	3.870	0.903
Summary Statistic				
Goodness of fit		0.0000		0.0000

5.2.3 Overall life Happiness

From the table 5.5, the independent variable which represents the minimum wage is found to be significant and has a positive impact on the overall life happiness. This significant positive impact is found in the estimated model either with or without control of heteroscedasticity. The other significant variable is ethnic groups. Gender is insignificant under random effects; however with control heteroskedastic it is significant. Skills, worker's educational level, number of children, contract, full time and changes in hours of work are insignificant on the overall life happiness. The goodness of the fit is insignificant in random effects analysis, however significant in heteroscedasticity analysis at 10% significant value

Table 5.5: Estimated models for Overall Life Happiness: with and without heteroscedasticity

Independent variables/ Dependent variables	Overall life happiness (random effects)		Overall life happiness (Heteroskedastic)	
	Coefficients	P- value	Coefficients	P- value
Minimum wage	0.245	0.046	0.2410	0.061
Gender	0.262	0.144	0.261	0.063
Skills	-0.127	0.182	-0.123	0.127
Workers educational level	0.001	0.977	-0.000	0.994
Number of children	-0.008	0.896	-0.005	0.924
dMalay	0.284	0.070	0.305	0.034
dcontract	-0.188	0.231	-0.197	0.167
dfulltime	0.117	0.877	-0.028	0.968
dnochangehr	-0.087	0.651	-0.057	0.759
Summary Statistic				
Goodness of fit		0.1868		0.0623

5.2.4 Happiness at Work

From the table 5.6, all the independent variable is insignificant except for the type of work (contract). The minimum wage, skills, worker's educational level, number of children, ethnic, full time basis, changes in hours of work after the implementation of minimum wage is found to have insignificant impact on the happiness at work. Most of the low wage workers are unhappy with their working life due to increase the price of travelling to the workplace, increase wages for junior and senior are same without considering the experience lead to unhappiness in working place. However, gender is insignificant without control heteroskedastic and significant under the control of heteroskedastic. The goodness of the fit of happiness at work is insignificant.

Table 5.6: Estimated models for Happiness at Work: with and without heteroscedasticity

Independent variables/ Dependent variables	Total level happiness at work (random effects)		Total level happiness at work (Heteroskedastic)	
	Coefficients	P- value	Coefficients	P- value
Minimum wage	0.058	0.065	0.062	0.593
Gender	0.212	0.187	0.223	0.089
Skills	0.016	0.852	0.017	0.817
Workers educational level	-0.013	0.674	-0.014	0.586
Number of children	0.026	0.632	0.028	0.556
dMalay	-0.058	0.681	-0.051	0.698
dcontract	-0.303	0.031	-0.304	0.014
dfulltime	0.268	0.692	0.126	0.864
dnochangehr	0.047	0.785	0.066	0.685
Summary Statistic				
Goodness of fit		0.4015		0.1511

5.3 Conclusion

As a conclusion, implementation of minimum wage reduce hours of work per day on average, increase in basic salary, the overall life happiness of low wage workers increase, increase the happiness level at work but insignificant.

CHAPTER 6

DISCUSSIONS AND CONCLUSION

6.0 Introduction

This chapter presents the discussions and main findings of this study which incur significant policy implication on the minimum wage policy in Malaysia. Suggestions for future research will be discussed in this chapter.

6.1 Discussions on Research Objectives

6.1.1 Minimum Wage and Hours of Work

Implementation of the minimum wage has reduced the working hours. For instance, if the workers worked more than 8 hours, they have to be paid more. Thus, in order to avoid high wage payment, the employer tends to reduce the hours of work. The finding is similar to the previous study by Stewart and Swaffield (2004), whereby implementation of the minimum wage able to decrease the basic hours of the low wage workers by around 1 and 2 hours per week.

6.1.2 Minimum Wage and Employment

Implementation of minimum wage in Malaysia appears to have no effects on the employments because there are still some companies avoid or postpone the implementation of minimum wage. This finding is similar with the previous studies by Wang and Gunderson (2012). They mentioned the employers in developing countries such as China also simply not comply with minimum wage legislation and huge numbers of workers who are willing to work at low wage are mostly foreign workers.

6.1.3 Minimum Wage and Overall Life Happiness

Overall life happiness level of low wage workers has increased significantly due to increase in the minimum wage. This is because if the standard living of low wage workers increases, it tends to reduce the burden of the low wage workers, purchase essential goods and overall do not have to depend on a third party for a help. Thus, this will increase overall happiness in low wage of workers of life. This finding is similar to a previous study by the author Frey and Stutzer, (2002), whereas they find that happiness increase when income increases.

6.1.4 Minimum Wage and Total Happiness at Work

Implementation of the minimum wage has an insignificant relationship with total happiness at work. This is because; a small part of the low wage workers did not satisfy with the minimum wage because even though they work for many years, but their wage does not increase much. In spite of that, the low wage workers dissatisfy with the minimum wage as their wage that equal with new comers. Thus this will

reduce their motivation at work place. In the long run they might leave the work. Moreover, increase in fuel price leads to high transportation fees. Therefore, it makes low wage workers finds that, they have to spend more on transportation to work.

6.2 Policy Implications and Suggestions for Future Study

Government should take into consideration the company's compliance rate or enforcement toward minimum wage legislation. There are many companies still postpone the implementation of the minimum wage that makes no effects on the employments. Thus, further studies need to analysis the effects of minimum wage in Malaysia, so that the low wage workers can contribute to the GDP of a country.

If the companies having difficulties in imposed the minimum wage, government should divide the minimum wage based on age. For example, Adult rate (21 and over) Young development rate (18-20), Young person (under 18) and Apprentice rate. The various minimum wage based on age are imposed in the United Kingdom. The different rate was implemented in the United Kingdom since year 1999 (15 years), and each year the minimum wage rate increase according to "various age". For example, in 1999 the minimum wage rate for an adult per hour is £3.68; in current year 2013 is £6.31. United Kingdom's National Minimum Wage is widely perceived to be successful over fifteen years that have been identified through careful and non-ideological research and academic economist (Manning, 2009). A Young person can receive lower wages than the adult because they are a new comer and lack of experience. Furthermore, they have fewer burdens than the adult. The adult should receive a high minimum wage since they are in the work force for a long time.

Development and apprentice should receive low wages than the young person and adult. By doing this, it can avoid unemployment and give chances to the young person to participate in the workforce and motivate adult to stay on the labor force. Thus, everyone in the country able to receive minimum wages fairly.

Implementation of minimum wage increases the low wage worker's happiness at work insignificantly, although it increases the happiness of overall life. This finding highlights that the implementation of the minimum wage could be mis-manipulated by the employers. For instance, based in-depth interview with one of the respondent, she has pointed out that after the implementation of minimum wage, the salary package has been re-structured and amount of lunch hours and over-time reduce. Furthermore, it also can increase workload. This will certainly bring unhappiness to the workers. This finding highlights that implementation of minimum wage in Malaysia could be manipulated and supplement policy is needed to ensure that employers will not manipulate the implementation.

The government has realized the important of Overall life happiness of people in the country. In the budget 2014, the happiness index has recommended instead of using GDP. Thus, it becomes one of the efficient ways. Happy people have a high tendency to have good health, money, security and high level productivity at work. In this context, life happiness is one of the main dimensions to measure a country's development. This study found that implementation of minimum wage able to increase the happiness of low income workers.

The government should ensure that, the companies that implement the minimum wage and enforcement should play an important role. Government should promote hourly minimum wage as well, since many employees lack of knowledge on hourly minimum wage. Furthermore, the government should establish a call center such a “Pay and Work Rights Helpline”. For instance, if the workers find that they are not getting the national minimum wage, they should contact the call center and make a complaint. In that case, the government should ensure their identity keeps in confidential.

6.3 Limitation of the Study

Limitation of the study is mostly on the data availability. This study uses a panel data with small sample size and covers a period of one year. This renders the generality of the findings at risk. Further studies suggest using large sample size and duration to investigate the impact of minimum wage implementation in Malaysia. In methodology part, difference in difference estimator should be used. However certain companies do not comply with the minimum wage legislation and uncertainty of the low wage workers towards minimum wage prevent the present study from using difference in difference estimator. Future studies are suggested to match a control group in estimating the impact of minimum wage in Malaysia.

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