Long Work Hour and Intention to Have Children, a Case Study in Hong Kong Long Working Hour Sector Workers

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Abstract

This study investigated the work hours, work-life balance and intention to have children of workers in a place without Standard Working Hour legislation and with very low birth rate, Hong Kong. Method used a questionnaire survey with 200 below 40, married, full time long working hour sector workers. Results showed these participants had long work hour (52 hours/week). Most reported prolonged fatigue level, sleepiness and extreme tiredness. Most considered long work hour was the highest factor affecting intention to have children. Correlation analysis showed there exist an inverse relationship between long work hour and intention to have children (r=-0.78) and a direct relationship between long work hour and level of concern (r=0.78). To conclude, workers in Hong Kong, without Standard Working Hour legislation, had long work hours, poor work-life balance, low intention to have children and high level of concern.

Keywords: work hour, work-life balance, intention to have children, birth rate

1. Introduction

Work-life balance describes an individual's control over their work. A balance is achieved when an individual's right to a fulfilled life inside and outside paid work is accepted and respected as the norm, to the mutual benefit of the individual, business and society (Community Business, 2010). Long work hour results in a poor work-life balance, with ill effects such as an unwilling to work, a great likelihood of changing jobs, disharmony, lack of exercise, stress, poor diet, exhaustion, insomnia, depression and health problems (e.g., cancer) (Welford, 2008). Long work hour not only affects the health of employee, but also make them have no time to take care of their families, especially their children. Compared with other developed countries, Japan is known both for its long work hours of market work and for its excessively low fertility rate (Daido and Tabatay, 2013). This study also showed the social norms led to multiple equilibria: one with long work hours and a low fertility rate and another with short work hours and a high fertility rate. This might explain why the long work hours and low fertility rate were observed in Japan (Daido and Tabatay, 2013). Japan's long work hours have been highlighted as a major factor in the country's birth rate reaching an all-time low. Many Japanese couples find it so hard to achieve a suitable work-life balance that they do not have time or energy to have children (McDonald, 2008).

1.1 Work hour and birth rate

A review in the literature further clarifies how work hour and birth rate are related in different aspects:

1.1.1 Husband-Wife Relationship

Long work hour decreases time for communication and sex life and create negative emotion and depression which in turn worsen husband-wife relationship which in turn affect their plan to have children. Behar (2001) showed that in United Kingdom couples 1/3 believed that long work hour brought negative effect on relationship. More than 1/2 agreed have suffered sex life. 70% said too tied to have conversation. O'Conner (2012) showed that people worked 11 hours a day or more had more than double the risk in developing depression than those worked eight hours or less. A study by Hong Kong Federation and Trade Union (2012) showed 10% married women stated that long work hours strongly affected their marriage and 8.3% stated long work would affect their plan to have children.

1.1.2 Parent-Child Relationship

Long work hour causes imbalance between work and family life; reduce time for communication, education and care for children. Wight and coworkers (2008) collected data from 4081 parents working on non-standard hours showed that teenagers lacking parental care afterschool would have higher chance to commit misbehavior. Fursman (2009) showed people worked 50 hours or more each week had no energy for parenting, forced to reduce time spending on children and rarely enjoyed special occasions with children. Centre for Social Policy Studies (2005) telephone interviewed 511 Hong Kong parents with long work hours and primary school children showed that lowly educated or low-skill parents were unlikely to spend holidays with children.

1.1.3 Pregnancy Planning

Long work hour decreases the ability for couples to have enough time to take care their babies after birth and therefore decrease the chance to have children. Moss (2009) interviewed 22 parents and 33 grandparents and employers in 7 workplaces showed that people who work non-standard hours tend to have a different rhythm or routine to their days and week from people who work standard hours and parents were significantly less able to plan ahead and make childcare arrangements.

1.1.4 Ease of getting pregnancy

Long work hour increases stress, reduce sexual activity and increase hormonal disturbance risk which would decrease the ease to get pregnant. Tuntiseranee and coworkers (1998) found that long working hour is a risk factor of subfecundity (time of 7.8 months or longer to pregnancy for couples who plan a pregnancy).

1.1.5 Risk of Abortion

Long work hour increases stress, decreases rest and worsen mother and fetal health which increases the risk of abortion. Hatch and coworkers (1997) found out infants of women working long hours late in pregnancy showed reduction in gestation-adjusted birth weight of about 80gm, compared with women working 20 hours or less. When long hours (>40 hours per week) were combined with job activity, the estimated reductions ranged up to 350 gm.

1.2 'Work Hour and Birth Rate' Model

Based on the above, a 'Work Hour and Birth Rate' model was created to help understand the possible interactions of various factors between work hour and birth rate (Figure 1). The working hour can worsen the work-life balance, which in turn produces negative effect on husband-wife relationship, parent-child relationship, pregnancy planning; decreases ease of getting pregnancy and increases risk or abortion. All these decrease pregnancy and decrease birth rate.

1.3 Effects of low birth rate

The decrease in birth rate, coupled with the decrease in mortality rates and increase in life expectancy due to improvements in medicine and sanitation, will result in worsening the ageing population, which in turn creates demographic challenges in reduction in workforce and increase in pressure on welfare and health services. These two are directly related the declining size of workforce means the remaining working population has to increasingly bear the public finances burden such as tax. In addition, the decrease in workforce impacts on productivity and economic growth, reduced productivity, creates problems in employment and labor supply. Therefore the possible causes of low birth rate, like the long work hour and intention to have children, are highly needed to be investigated.

To study the effect of long work hour on intention to have children and to supplement the results for the Japan studies, we choose another place with long work hour, Hong Kong. Full-time employees in Hong Kong work on average 49 hours per week. This is higher than the maximum 40 hour work week defined by law in many countries (Chung, Pang and Tong, 2009; Labour Department, 2012). According to the Report of the Policy Study on Standard Working Hour, the average weekly working hour of full-time employee is 49 hours and the median is 48 hours. 47.7% of all employees and 50.6% of full-time employees need to work more than 48 hours per week. For the long working hour sector (LWHS) which includes retail, estate management and security, restaurants, land transport, elderly homes and laundry and dry cleaning service, the situation is even worse. 56.5% of the employees in LWHS work at least 54 hours per week. Therefore, the LWHS workers represent a population with very long work hour and are highly suitable for long work hour research.

According to the statistics from Food and Health Bureau (2015), the crude birth rate (number of live births per 1000 population) of Hong Kong in 2013 was 7.9, which was lower than that in Japan (8.2), Singapore (9.3), Taiwan (8.5), USA (12.4), United Kingdom (12.1), actually, in the past 10 year, the average birth rate in Hong Kong per year was lower than 10. Therefore, Hong Kong is one of the places with the lowest birth rate in the World.

With the above background, it would be highly important to study the work hour, work life balance and intention to have children of Hong Kong LWHS workers as they have very long work hour and Hong Kong has very low birth rate. How their intentions to have children are being affected by the long work hour? Will their intentions to have children are lowered because of the long work hour? Whether they concern this issue? Whether there is a relationship among long work hours and intention to have children and their concern?

Research Aim: to investigate the condition and relationship between work hour, work life balance and intention to have children on full-time LWHS workers in Hong Kong.

Working Hypothesis: There is a relationship between work hour, intention to have children and level of concern about long work hours on intention to have children in full-time LWHS workers in Hong Kong.

H_1: The work hour is inversely related to intention to have children.
H_2: The work hour is directly related to level of concern about long work hours on intention to have children.

2. Methodology

The study was performed using a questionnaire survey. People married and below 40 and employed as full-time LWHS workers in different locations in Hong Kong were randomly selected and invited to answer the questionnaire in a voluntary and anonymous basis. People above 40 would probably have low intention to have children and therefore excluded from study. No release of personal information would be possible. The questionnaire was modified from the questionnaire utilized in the work-life balance study of the general population in Hong Kong (Chung, Pang and Tong, 2009) which assessed the work hour conditions and combined with items enquiring for intention to have children. No personal identifiers were collected.

In more detail, the following areas were included in the questionnaire: work hour duration (item 1); self-perception of work-life balance condition (item 2); problem encountered because of disturbed work-life balance (Productivity and work quality has reduced dramatically due to long working hours, Prolonged fatigue level, sleepiness and extreme tiredness, I get physically sick easily and frequently due to heavy workload, I do not have any private time for recreation activities or sports at all, My work has affected my relationship with my friends, I don't have time staying with my partner and family, I feel stressed out, depressed and exhausted after work, Work pressure creates insomnia and poor diet, I become accident-prone, item 3); intention to have children, (item 4); the factors that affect intention to have children (long work hours, high housing expenses, high cost of raising children, education system, other factors e.g. environment, personal intention, item 5); level of concern about long work hour on the intention to have children, (item 6); gender (item 7); age (item 8).

Participants were asked individually face to face on each item and the responses were recorded on the questionnaire sheet in front of the participants.

Sample size determination: It was targeted to obtain a sample size of 200 participants, which was comparable to similar mental health surveys (Zulkefly and Baharudin, 2010).

The data were entered to an Excel (Microsoft Office v.2010, U.S.A.) file for further data analyses. Correlation analyses were performed between work hour and intention to have children; work hour and level of concern about long work hour on intention to have children using Instat (v.3, U.S.A.).

3. Results

200 questionnaires were completed and the data were analyzed and presented below:

3.1 Demographic Data

The male to female ratio of the subjects were around 2:3. They in general belonged to the younger age groups, with 55% within the 20 – 24 group (Table 1).

3.2 Work Hours

The average work hour per week of subjects was 52 hours (SD=7.3). Around half (46%) subjects worked between 51 – 60 hours and some (6%) worked between 51 – 60 hours. There was 1 subject worked up to 71-80 hours per week (Table 2).

3.3 Self-Perceived Work-Life Balance

On average the degree of achieved work-life balance for subjects were 4.06 out of 10 (SD=1.7). 34 (17%) subjects were 1 – 2 out of 10; 88 (44%) subjects were 3 – 4 out of 10 and 62 (31%) subjects were 5 – 6 out of 10 (Table 3).

3.4 Problems due to Disturbed Work-Life Balance

77.5% of the subjects reported prolonged fatigue level, sleepiness and extreme tiredness; 68% reported did not have time staying with their partners and/or family; 63.5% reported productivity and / or work quality has reduced dramatically due to long work hours (Table 4).

3.5 Intention to have children

The highest score of the scale was 5 and it meant highest intention to have children; the lowest score of the scale was 1 and it meant lowest intention to have children. The mean score was 2.045 (SD=0.82). From the result (Table 5) 40% selected score 2, 97.5% selected score 1-3, only 2.5% selected score 4 and none selected score 5.

3.6 Factors that affect intention to have children

The highest score of the scale was 5 and it meant that the factor had the highest effect on the intention of giving birth; the lowest score of the scale was 1 and it meant that the factor had the lowest effect on the intention of giving birth. Long work hour got the highest score among the factors that affect intention to have children and the mean score was 4.395 out of 5. The second highest was the housing expenses and its scored 4.145. The third highest was the cost of raising children and the score was 4.11. The fourth highest was the educational system in Hong Kong and the score was 3.235. Finally, the lowest were other factors like environment and personal intention and the score was 2.84 (Table 6).

3.7 Level of concern about long work hour on intention to have children

The highest score of the scale was 5 and it meant the highest level of concern about long work hour on intention to have children; the lowest score of the scale was 1 and it meant the lowest level of concern. The mean level was 3.97 (SD=0.79) and there were over 70% of participants chose 4 and 5 which meant they highly concerned the long work hour that affected their intention to have children (Table 7).

3.8 Association between work hour and intention to have children

To test for H_1: The association between work hour and intention to have children, the work hour was related to the intention to have children, the responses of item 1 were correlated with the responses of item 4 using correlation analysis. The Spearman r = -0.7845 (no Gaussian assumptions). A negative value of r showed an inverse relationship. Statistic test showed that two-tailed P value is < 0.0001, r was significantly different than zero. A plotting of the work hour against intention to have children was shown on (Figure 2). Some linear relationship between the work hour and intention to have children could be found.

3.9 Association between work hour and level of concern about long work hours on intention to have children

To test for H_2: The association between work hour and level of concern about long work hour on intention to have children, work hour was related to level of concern about long work hour on intention to have children, the responses of item 1 were correlated with the responses of item 4 using correlation analysis. The Spearman r = 0.7838 (no Gaussian assumptions). Statistic test showed that two-tailed P value was < 0.0001, r was significantly different than zero. A plotting of the working hour against level of concern about long work hour on intention to have children was shown on (Figure 3). Some linear relationship between the work hour and level of concern about long work hour on intention to have children could be found. This meant in general the workers with longer work hour were more highly concerned their long work hour that affected their intention to have children.

4. Discussion

This is the first study selected Hong Kong as an example of a place with very low birth rate, without standard work hour legislation and with workers with long work hour (LWHS) to investigate the workers' work hour and intention to have children conditions.

The result showed the average work hour per week of full time LWHS workers in Hong Kong was around 52 hours. This was significantly longer than other places with standard working hour legislation where the working hour per week was only 40 (Ghosheh, 2013). In addition, there were individual LWHS workers who have a working hour much longer than that of the general population (over 70 hours per week) (Chung, Pang and Tong, 2009). This showed the work hour condition of LWHS workers in Hong Kong was much longer than that in the general population in Hong Kong and in many other places.

The self-perceived work-life balance of LWHS workers was 4.06 out of 10. This work-life balance condition was worse than the other professions, which was 5.7 out of 10 (Chung, Pang and Tong, 2009). From the results, 61% of workers had score from 1 to 4, this showed they in general had poor self-perceived work-life balance. This could be expected as many of them had long work hour.

For the problems due to a disturbed work-life balance, 77.5 per cent of full time LWHS workers reported a disturbed work-life balance prolonged fatigue level, sleepiness and extreme tiredness; 68% reported did not have time staying with their partners and/or family. The other industries also found disturbed work-life balance prolonged fatigue level, sleepiness and extreme tiredness (Chung, Pang and Tong, 2009). It showed that a high percentage of LWHS workers were adversely affected by the disturbed work-life balance in terms of prolonged fatigue level, sleepiness and extreme tiredness, and did not have time staying with their partners and/or family. All these factors could contribute to low intention to have children and their high level of concern about long work hour on their intention to have children, and this was consistent with the 'Work Hour and Birth Rate' model (Figure 1).

About their intention to have children, the mean score was 2.045 out of 5 with 97.5% selected score 1-3, showed that the LWHS workers in general had low intention to have children. This could be expected as many of them had long work hour, poor work life balance and did not have time to stay with their family. The item on factors that affect intention to have children further clarified this issue. Long work hour got the highest score among the factors that affect intention to have children and the mean score was 4.395 out of 5. This showed that the workers considered long work hour was a major factor that affects their intention to have children. In the item on level of concern about long work hour on intention to have children, the mean level was 3.97 and there were over 70% of participants chose 4 and 5, this meant the workers were highly concerned the long work hour that affected their intention to have children. They might hope to have children, but because of the long work hour, they were forced to have low intention to have children, therefore they were highly concerned about this. This was also consistent with the 'Work Hour and Birth Rate' model (Figure 1).

This is also the first study to work on the correlation between work hour and intention to have children in Hong Kong. Correlation analysis between work hour and intention to have children showed some inverse relationship between them ($r=-0.78$), that is, long work hour was associated with poor intention to have children. This association was strong although the plots scattered and there were many variations within the populations and existence of many confounding factors. The result supported H_1. Correlation analysis between work hour and level of concern about long work hours on intention to have children showed direct relationship between them ($r=0.78$), that is, long work hours were associated with level of concern about long work hours on intention to have children. This association is strong although the plots scattered and there were many variations within the populations and existence of many confounding factors. The result supported H_2. These two associations meant in general the workers with longer work hour were having lower intention to have children and they really concerned about this problem of long work hour; otherwise they might have higher intention to have children. These results were also consistent with 'Work Hour and Birth Rate' Model (Figure 1).

On the other hand, this study, being a cross-sectional study, only showed associations, it did not prove the cause and effect relationship between long work hour and intention to have children. Further longitudinal studies which have randomized control design are needed to show the cause and effect relationship. Further studies on different areas around the world are also needed to see whether the work hour and intention to have children conditions and relations are similar. Finally, further studies on the relations of others parameters in the 'Work Hour and Birth Rate' Model are needed to show whether they are strong relations.

This study provided the scientific evidence that in an area without standard working hour legislation, the work hour was long, the work-life balance was poor, the intention to have children was low and the level of concern on the long work hour was high in the LWHS workers. This scientific evidence can be useful for the policy making on the work hour issue.

5. References

Behar, D. (2001). Long hours can put strain on relationships. Daily Mail. [Online] Available: http://www.dailymail.co.uk/news/article-27915/Long-hours-strain-relationships.html (December 29, 2015).

Centre for Social Policy Studies (2005). Survey on Parent's Working Hour and Parent-Child Relationship. [Online] Available:
http://www.chsc.hk/eng/content_pub/report/ExecutiveSummary_Parental_Working_Hours.pdf (December 30, 2015).

Chung, T. Y. R., Pang, K. L. K., & Tong, Y. W. J. (2009). Work Life Balance Survey of the Hong Kong Working Population 2009. Hong Kong: The University of Hong Kong. [Online] Available:
http://www.communitybusiness.org/images/cb/publications/2009/WLB09_HKU.pdf (October 1, 2010).

Community Business (2010). Definition of Work-life Balance. [Online] Available: http://www.communitybusiness.org/focus_areas/WLB.htm#1 (October 1, 2010).

Daido, K., & Tabatay, K. (2013) Social Norms on Working Hours, Work-Life Balance, and Fertility Choice. School of Economics Kwansei Gakuin University Discussion Paper No. 108.

Food and Health Bureau (2015). Crude birth rate - number of live births per 1 000 population. [Online] Available:
http://www.fhb.gov.hk/statistics/en/statistics/crude_birth_rate.htm (December 29, 2015).

Fursman, L. (2009). Parents' Long Work Hours and the Impact on Family Life. Social Policy Journal of New Zealand, 35, 55.

Ghosheh, N. (2013). Working conditions laws report 2012. A global review. Geneva: International Labour Organization.

Hatch, M., Ji, B. T., Shu, X. O., Susser, M. (1997). Do standing, lifting, climbing, or long hours of work during pregnancy have an effect on fetal growth? Epidemiology, 8, 530–536.

Hong Kong Federation of Trade Union (2012). Questionnaire Survey of Effect of Long Work Hour on Female Workers (in Chinese). [Online] Available: http:// www.ftu.org.hk/zh-hant/about?id=32&nid=13 (December 29, 2015).

Labour Department (2012). Report of the Policy Study in Standard Working Hours. Government Logistics Department, Hong Kong.

McDonald, P. (2008). Very Low Fertility Consequences, Causes and Policy Approaches.
The Japanese Journal of Population, 6(1), 19-23.

Moss, J., (2009). Juggling acts: how parents working non-standard hours arrange care for their pre-school children. Social Policy Journal of New Zealand, 35, 68-78.

O'Connor, A. (2012). Really? The Claim: Long Work Hours Can Cause Depression The New York Times, February 6.

Tuntiseranee, P., Olsen, J., Geater, A., & Kor-anantakul, O. (1998). Are long working hours and shiftwork risk factors for subfecundity? A study among couples from southern Thailand. Occupational and Environmental Medicine, 55(2), 99-105.

Welford, R. (2008) Work-life balance in Hong Kong: Survey Result. The University of Hong Kong, Hong Kong. [Online] Available:
http://www.ethicsworld.org/ethicsandemployees/PDF%20links/Hong%20Kong%20WLB.pdf (October 1, 2010).

Wight, V. R., Raley, S. B., & Bianchi, S. M. (2008). Time for Children, One's Spouse, and Oneself among Parents Who Work Nonstandard hours. Social Forces, 87 (1), 243-271.doi: 10.1353/sof.0.0092

Zulkefly, N. & Baharudin, R. (2010). Using the 12-item General Health Questionnaire (GHQ-12) to Assess the Psychological Health of Malaysian College Students. Global Journal of Health Science, 1(2), 73-80.

Table 1: Age distribution

Age range	Number (%) $N^{\dagger}$=200
20-24	110 (55%)
25-29	46 (23%)
30-34	28 (14%)
35-39	16 (8%)

†N=Total number of Subject

Table 2: Distribution of the 'work hour'

Work hour per week	Number (%) $N^{\dagger}$=200
< 30	2 (1%)
31- 40	10 (5%)
41- 50	81 (40.5%)
51- 60	94 (46%)
61- 70	12 (6%)
71- 80	1 (0.5%)
> 80	0 (0%)

†N=Total number of Subjects

Table 3: Distribution of degree of achieved work-life balance

Degree of achieved work-life balance	Number (%) $N^{\dagger}$=200
0	1 (0.5%)
1-2	34 (17%)
3-4	88 (44%)
5-6	62 (31%)
7-8	13 (6.5%)
9-10	2 (1%)

†N=Total number of Subject

Table 4: Distribution of Problems due to a disturbed work-life balance

Type of problems:	Number (%) $N^{\dagger}$=200
Productivity and/or work quality has reduced dramatically due to long working hours.	127 (63.5%)
Prolonged fatigue level, sleepiness and/or extreme tiredness.	155 (77.5%)
I get physically sick easily and/or frequently due to heavy workload.	47 (23.5%)
I do not have any private time for recreation activities or sports at all.	80 (40%)
My work has adversely affected my relationship with my friends.	113 (56.5%)
I don't have time staying with my partner and/or family.	136 (68%)
I feel stressed out, depressed and/or exhausted after work.	121 (60.5%)
Work pressure creates insomnia and/or poor diet	122 (61%)
I become accident-prone	57 (28.5%)

†N=Total number of Subject

Table 5: Intention to have children

Intention (1: lowest, 5: highest)	Number (%) $N^{\dagger}$=200
1	58 (29%)
2	80 (40%)
3	57 (28.5%)
4	5 (2.5%)
5	0 (0%)

†N=Total number of Subject

Table 6: Factors affecting intention to have children

Factors affecting intention to have children	Mean (1: lowest, 5: highest) N†=200
Long working hours	4.395
Living problems (e.g. high price of housing)	4.145
Cost of raising children	4.11
Education system	3.235
Others (e.g. environment, personal intention)	2.84

†N=Total number of Subject

Table 7: Level of concern about long work hours on intention to have children

Level of concern (1: lowest, 5: highest)	Number (%) N†=200
1	0 (0%)
2	4 (2%)
3	53 (26.5%)
4	88 (44%)
5	55 (27.5%)

†N=Total number of Subject

Figure 1: Work Hour and Birth Rate Model

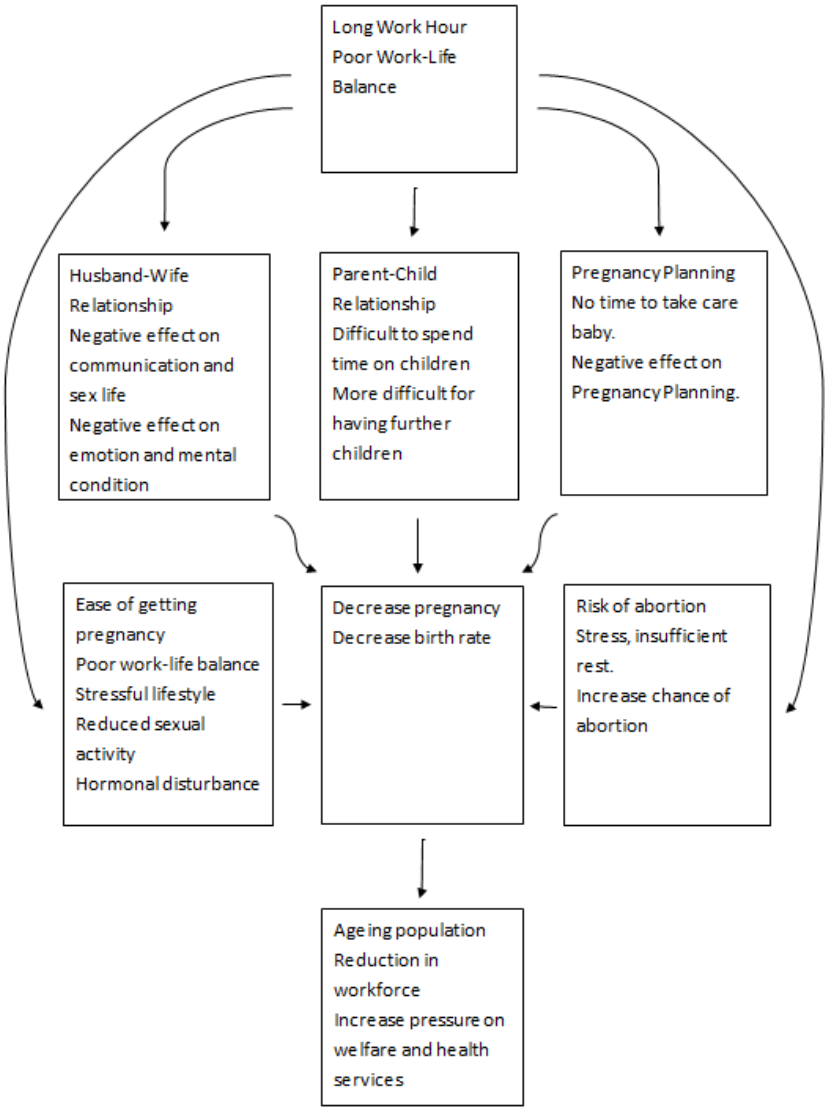

Figure 2: A plotting of work hour against intention to have children

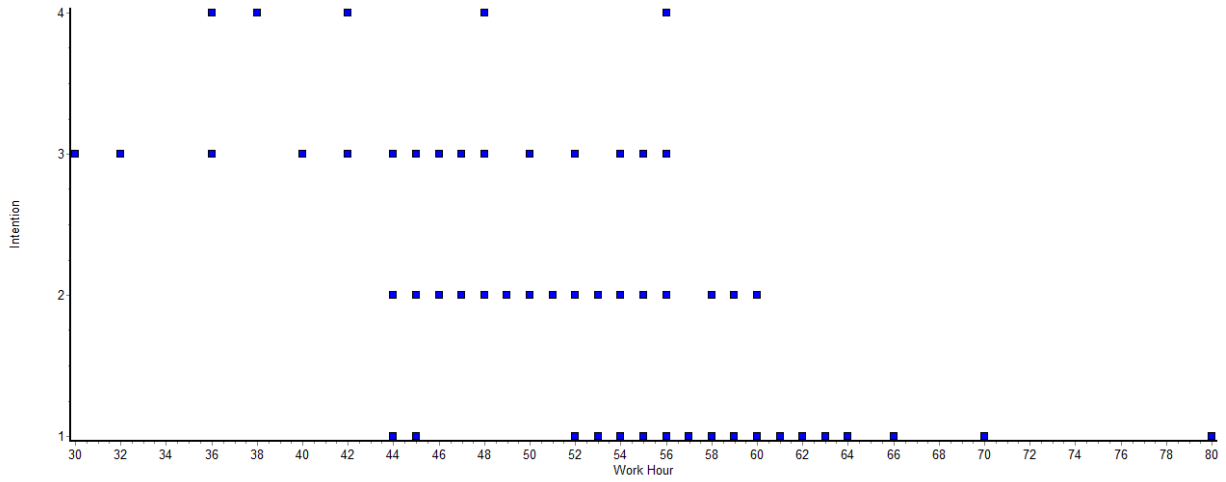

Figure 3: A plotting of work hour against level of concern about long work hour on intention to have children