Pair Assignment 3

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1   Motivation

For the final project we wish to address the research question: *"Are career pursuits reconcilable with a happy life?"*. Our hypothesis is that under some conditions, pursuing a career makes it difficult to reconcile high work intensity with a family or a social life, which could decrease overall life-satisfaction. The link could be particularly pronounced for women. First, gender norms may impose a happiness penalty, if pursuing a career clashes with gender roles in the society. Second, men are more likely to have a partner who work fewer hours, which could ease the tension between a career and family life.

To analyse the question we are using three data-sources. The General Social Survey (GSS) from the United States, which is ongoing since 1972 and ask survey respondents about their well-being in different dimensions (overall, work, family), demographic characteristics, job-affiliation, income and more. Further, we use the Personal Consumption Expenditure chained index from the Federal Reserve Bank of St. Louis to adjust nominal income variables for inflation. Last, we use data from the Current Population Survey on income percentiles in age and educational groups, which is collected from the replication file of Bertrand (2013).[1]

Based on the available data-sources there are considerable methodological challenges, of which we will elaborate on the most pronounced. First, defining the group of individuals who pursue a career is problematic. In the literature, career pursuits have been proxied by income thresholds (Goldin 2004; Bertrand 2013). However, these measures neglect that individuals can have career ambitions in low-income jobs, and that not all high earners are pursuing a career. In this paper we also deploy an income-threshold variable, but interpret it simply as indicating high-income workers. Second, when analysing sub-populations of the GSS, we face issues of small sample sizes. The GSS has surveyed around 60.000 individuals between 1972 and 2014, but when comparing individuals with specific educational attainment, labour-force participation, family status, gender etc., the sample size can be reduced to a few hundred observations. Third, there is a large literature on whether it is possible to draw inference on subjective well-being measures, see for instance

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[1]Bertrand only includes the income percentiles between 1977-2010, and at a later stage we intend to calculate the income percentiles directly from the CPS.

Bertrand (2013) or Kahneman and Krueger (2006).

The scope of this paper is to combine data from the three above mentioned sources and present descriptive statistics and correlations that are of importance with respect to our research question. All steps are done dynamically, such that they are easily reproducible.

2 Descriptive results

Two of the central variables for our research are reported happiness and job-satisfaction, which are based on the two questions: *"Taken all together, how would you say things are these days?"* and *"On the whole, how satisfied are you with the work you do?"*. Figure 1 shows the distribution of answers to the two questions. The former is measured on a three point scale (higher is better), of which around 60 % of the sample report a middle happiness level. The latter is measured on a four point scale, and Figure 1 shows that a majority of the sample report either moderate or high job satisfaction (score 3 and 4).
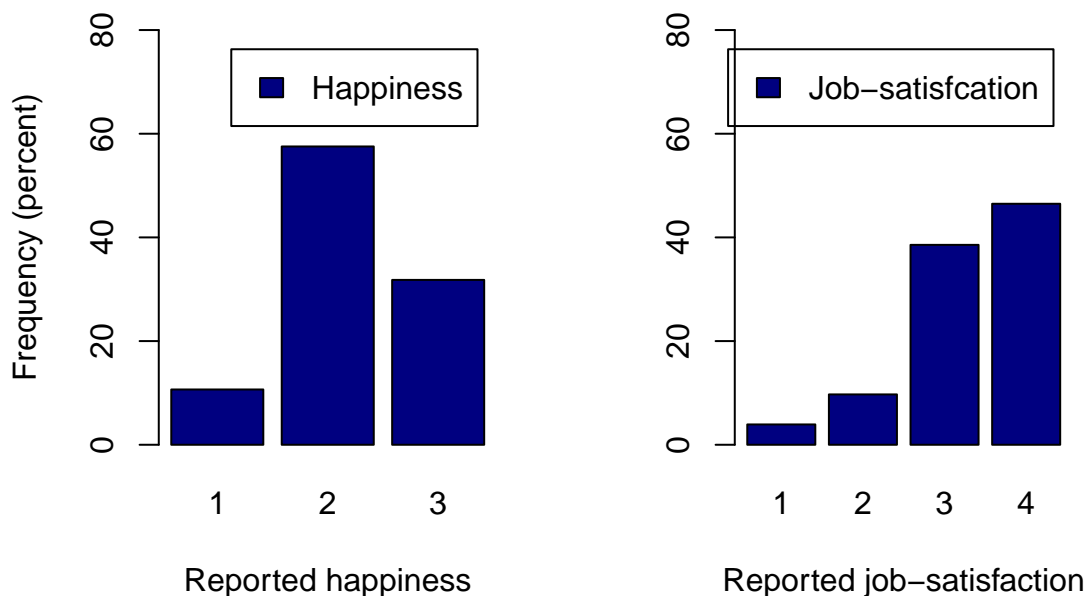

Figure 1: Distribution of reported happiness and job-satisfaction

2.1 Average happiness in different survey years

The GSS is conducted between 1972 and 2014. Due to year specific events, unintended differences in the implementation of the survey or trends in overall happiness, there can be year-specific differences. Figure 2 shows the average share of the population who reports to be very happy (score of 3) across the survey years.
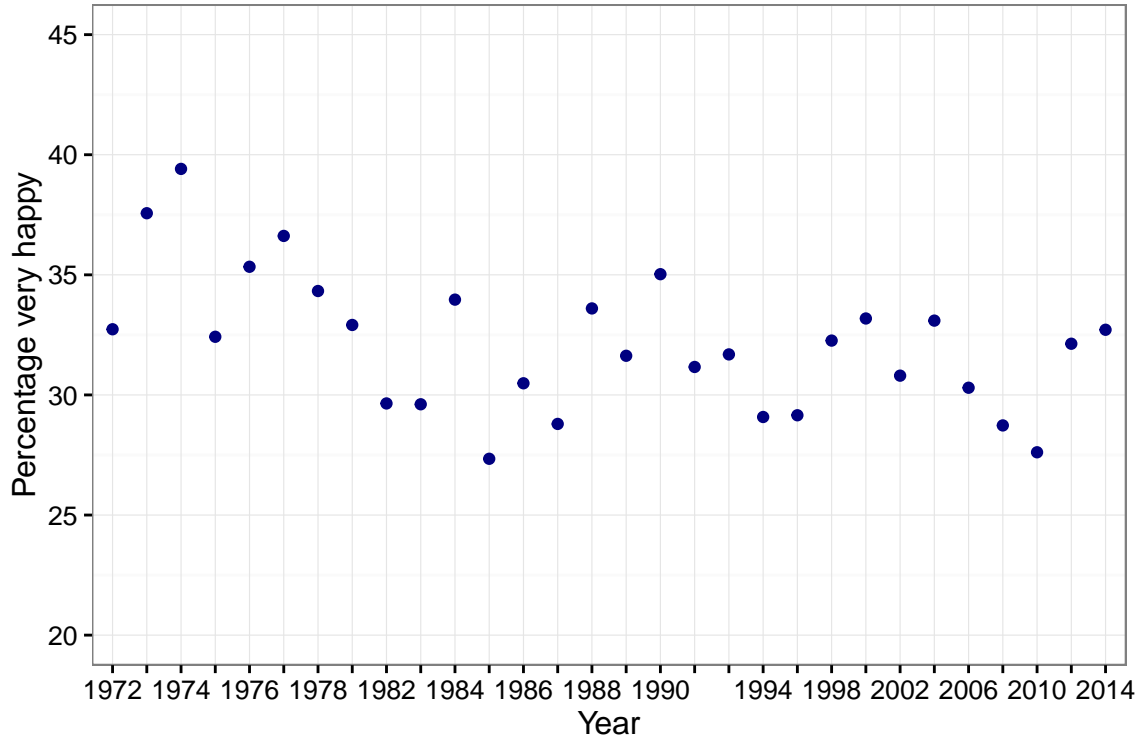
Figure 2: Average reported happiness over survey year, 1972-2014

Figure 2 shows that there is considerable variation between years, and a weak negative trend particularly between 1972 and 1983. It is not directly possible to disentangle what can be attributed to random noise and what is caused by structural changes, however, it signifies that it is pragmatic to control for survey year in a regression design to control for survey year fixed effects.

2.2 Happiness and age

Figure 3 investigates the relationship between reported happiness and age for college educated men and women.

In the GSS there is no apparent structural relationship between the share of respondents who report being very happy and age. Further, college educated women have a slightly higher average reported happiness level relative to men (38% vs. 34%).

2.3 Distribution of work-hours for full-time workers

Work intensity is another variable of interest for the final research design. "Hours worked last week" is available across the full survey from 1972-2014. This is an imperfect proxy for respondents average working
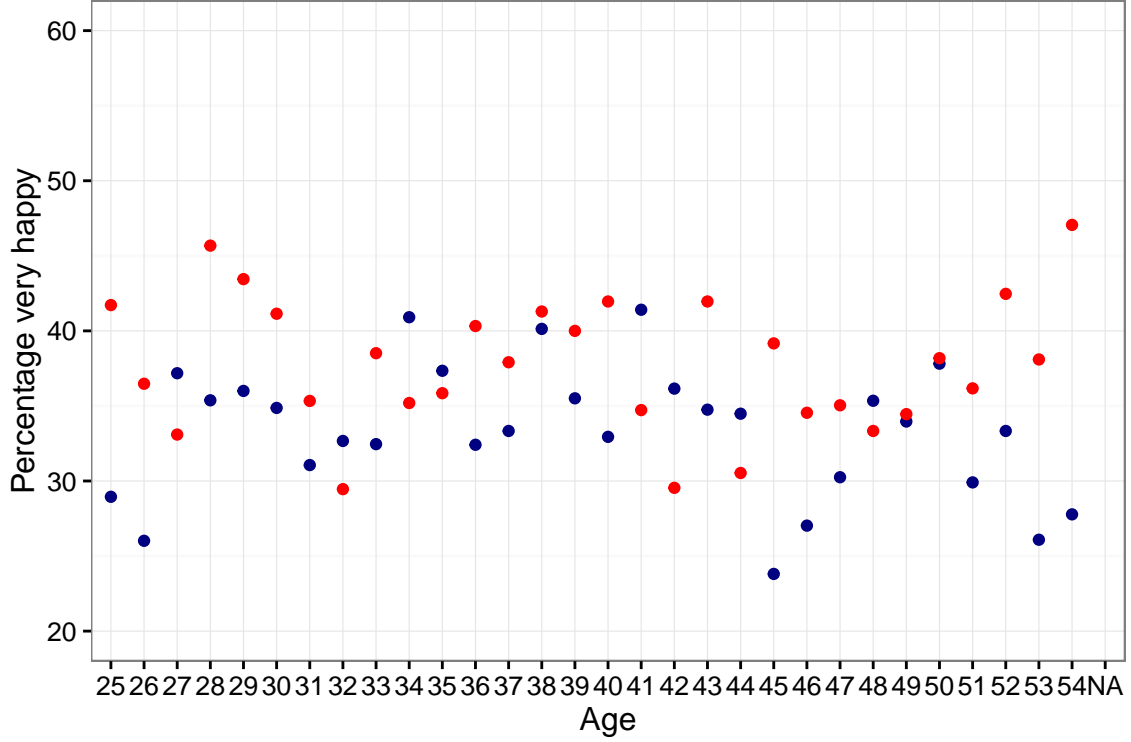
Figure 3: Happiness and age (college educated men and women)

hours over a full year, which unfortunately is not available. Figure 4 shows the frequency of hours worked last week for full-time workers. It is apparent that most respondents have worked around 40 hours a week, but also that there is considerable variance.

3 Gender

In today's society the strive for gender equality often clashes with labour market realities and the persistence of traditional gender norms. Previous studies found that the reconcilability of having a family and pursuing a career is still difficult to achieve for women, while it is rather the norm for men (Hipp and Leuze 2015). Thus, women who clash with traditional customs might face a "life happiness penalty".

Figure 5 shows how reported happiness depends on labour-market affiliation for men (blue) and women (red) with a college degree. It shows that men are substantially more likely to report being very happy when in full-time employment relative to part-time employment, which is not the case for women. Further, both men and women report high happiness levels when keeping house. Note, in the full sample only 35 college educated men are keeping house (there are 650 women) and when looking at all men, the average share who reports being very happy while keeping house is only 24 %.

Figure 4: Histogram of hours worked last week for full-time workers
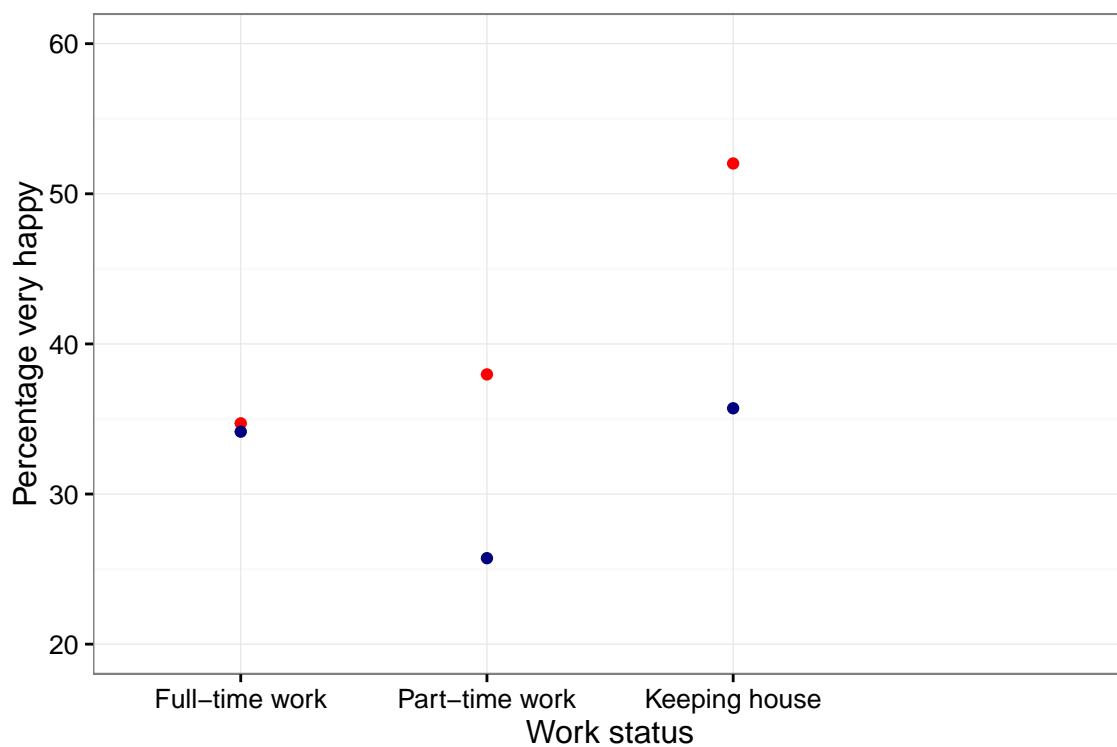

Figure 5: Happiness and labour-market affiliation (college educated men and women)

Figure 6 shows the share of college educated men and women who report being very happy depending on whether they earn more than the 25th (panel A) or 50th (panel B) income percentile of college educated men in their age cohort. The graph suggests that women have the same propensity to be very happe regardless of whether they are high earners or not, whereas the difference is substantial for men. The difference for men is even more pronounced when the threshold is set at the 50th percentile.
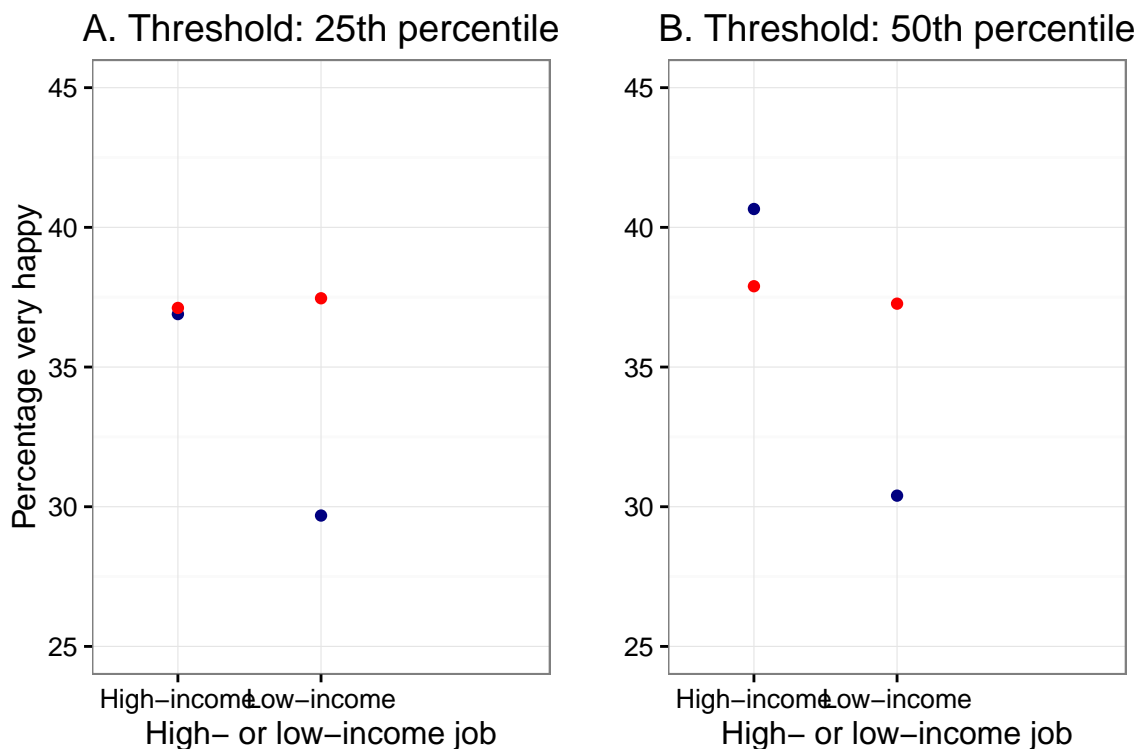

Figure 6: Happiness and income level

Figure 7 differentiates between the four possible combinations of having a family (married and children) and having a high- or low-income job (defined as earning more than the 25th income percentile of college educated men in the respondent's cohort). Both college educated men and women report substantially higher happiness levels when having a family. When not having a family, higher income improves life satisfaction for both genders although the increase is larger for men. Gender differences become more pronounced when people have a family. With a family, women are happier when they are not in a high-income job, whereas the opposite is true for men.

These descriptive results suggest that on average married couples with kids are best-off when following a male bread-winner model, which conflicts with more progressive gender norms. Note, however, that the results could be driven by omitted factors such as assymetric total family income or age across the family constellations which also could affect subjective well-being. In our final analysis we seek to identify the factors
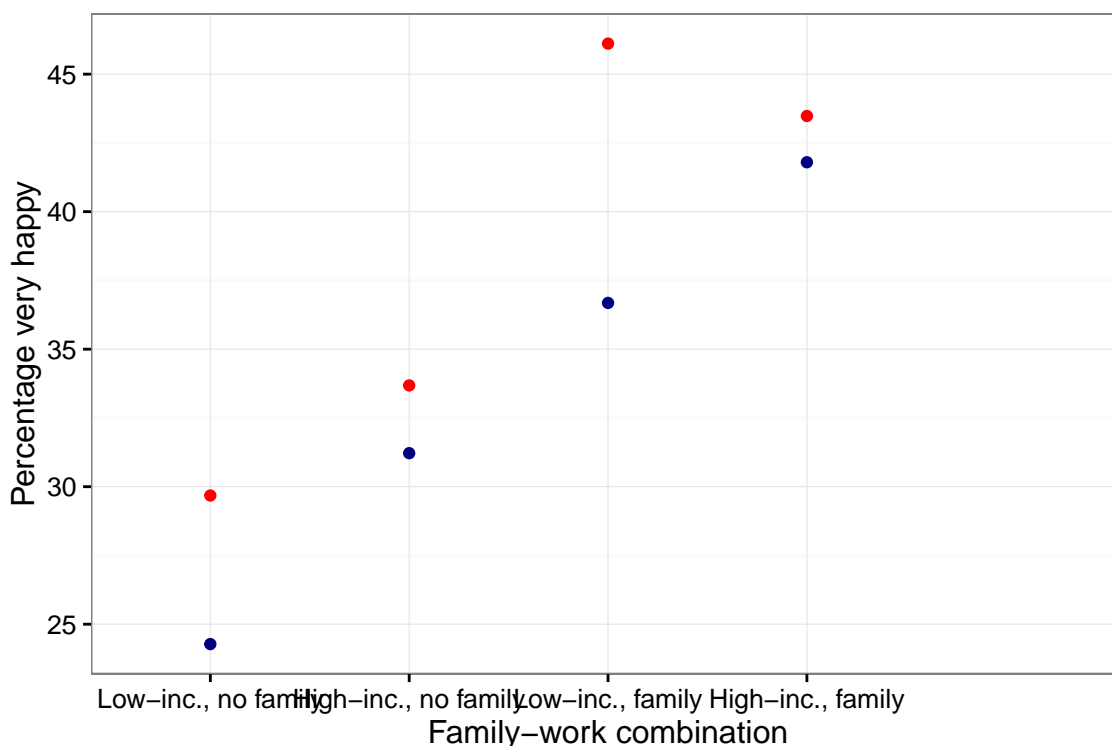
that are driving these results.

Figure 7: Happiness and family constellation

3.1 Interaction effects of marriage and job income for working men and women

The correlations shown in Figure 5-7 are influenced by omitted factors. To control for some of the confounding factors that are observable, we replicate a linear probability model by Bertrand (2013) and estimate the effect of marriage and the interaction effect of marriage and having a high-paid job (career) on the binary variable of being very happy. While Bertrand (2013) limits her analysis to college-educated women who are working, we also compare these findings to college educated men. The model controls for age, age-squared, the survey year, race and decade of birth.

Figure 8 shows the effect of marriage on the probability of being very happy for college educated men and women depending on job income. First, the effect of marriage is positive and significantly different from zero regardless of respondents' income level. The left panel shows that the effect of marriage on reported happiness is stronger for women who do not have a high-income job compared to women who do, as the interaction term between marriage and high job income is -0.07. Although this difference only is significant at the 10% level, job income seem to be much more important for the happiness of women compared to men, where having a high-paying job or not hardly influences the effect of marriage on happiness.
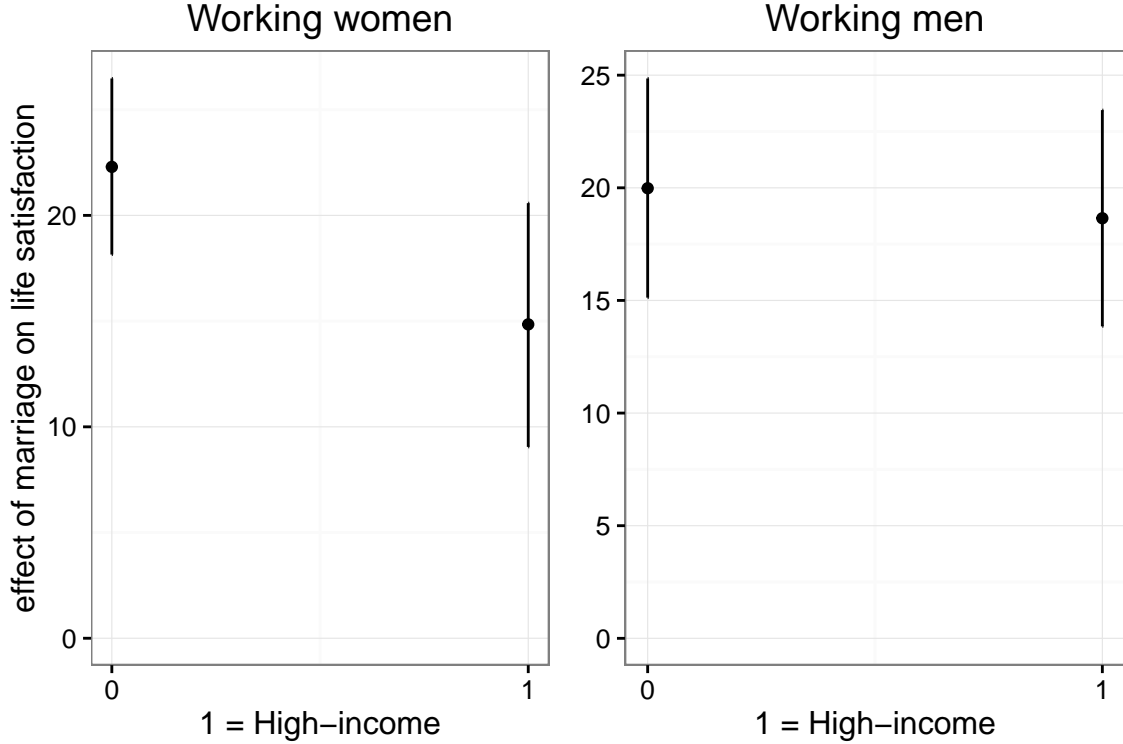
Figure 8: Interaction effects of marriage and job income on life satisfaction

4 Summary

The preliminary analyses indicate that some variation in reported happiness is associated with job-affiliation and gender. Further, our descriptive results suggest that determinants for happiness, such as having a family or high job-income, differ in magnitude and direction between genders. This supports our initial assumption of differences in reconcilability of a career pursuit and a happy life. However, it remains a challenge to construct models which can attenuate problems of confounding factors. For the final project we intend to investigate in more detail how the intensity of work influences happiness and whether there is a trade-off between job satisfaction and overall hapiness.

5 Software and packages used for the analysis

The analysis is done in R (R Core Team 2015b) with the use of the following packages: "ggplot2" (Wickham and Chang 2016), "repmis" (Gandrud 2016), "plyr" (Wickham 2015), "dplyr" (Wickham and Francois 2015), "MASS" (Ripley 2015), "Hmisc" (Harrell 2016), "interplot" (Solt and Hu 2016), "gridExtra" (Auguie 2016), "car" (Fox and Weisberg 2016), "foreign" (R Core Team 2015a), "gmodels" (Warnes et al. 2015), "quantmod"

(Ryan 2015) and "reshape" (Wickham 2014).

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