



JOB SATISFACTION IN A DEVELOPING COUNTRY: EXPLORING THE WORK-FAMILY RIVALRY

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Abstract

This paper empirically analyzes the relationship between familiar duties and job satisfaction in a developing country by using four different indexes. This analysis includes objective measures and subjective measures from data gathered in Colombia. In contrast to previous literature, objective measures are included through the interactive effects between the family responsibilities variables and the gender. Subjective measures are evaluated using the job-family compatibility perception. Our findings show that women tend to be less satisfied at work as the number of children increases, while men are more prone to satisfaction at work when they are single thus showing the importance given to the use of their own time. It also reveals that job-family compatibility is an important determinant of job satisfaction.

JEL Classification: J12, J16, J28

Keywords: *Job Satisfaction, Familiar Responsibilities, Gender, Job-Family Compatibility, Colombia.*

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INTRODUCTION

Time allocation between home and work is considered one of the most challenging trade-offs in the maximization of individuals' wellbeing. It determines many results such as the labor supply, division of labor at home, job satisfaction, marital stability and standard of living. Job satisfaction has received considerable attention in academic research during the past decades as a consequence of the complex relationships within competing spheres such as work, family, leisure, and social networks. Economic theory has studied particular aspects like the relationship between job satisfaction and time allocation, labor productivity, human capital investments, and labor externalities on happiness. Other, non-economic approaches have study the relationship of job satisfaction with individual roles' behaviors, social networks, mental and physical health, and organizational theory.

During the last decades, technical and economic progress modified several aspects to jobs and families. Now, it is common to find families where both the father and the mother work and where the traditional roles within the household have changed. Among the emerging needs because of these changes, it is the labor flexibility, which derives from the fact that the gap between the amounts of time spent on market, and nonmarket work for men versus women has narrowed. For example, in 2003, US women spent more time on market work and significantly less time on nonmarket work (housekeeping). For men, the patterns were reversed; between 1965 and 2003, men have spent substantially fewer hours on market work and somewhat more hours on nonmarket work. (*Council of Economic Advisers*, 2010).

However, the case of developing countries could be different because of multiple factors like gender discrimination in several levels (*e.g.* income, career prospects, and access to education), the existence of multiple restrictions in working hours and an increasing level of informal workers. Countries like Colombia are a good example of this trend.

From the previous facts, two important aspects emerge. First, the analysis of family-work time allocation requires the evaluation of the role of the worker and the role as a family member for men, as well as for women at the same time. Second, technical progress could modify the intuition behind the idea that family time and work time are rivals. Then, it is necessary to evaluate whether family and work are substitutes or complements.

Theoretically, the literature provides two different models. On one side, there is the *scarcity* model (*e.g.* Bartolome and Evans, 1979; Marks, 1977) that postulates that they are substitutes and it implies that they compete for time. On the other side, there is the *expansion* model (*e.g.* Greenhaus and Parasuraman, 1999; Grzywacz, 2002; Greenhaus and Powell, 2006), which differs in the idea of substitution and proposes a complementarity relationship where family helps to deal with work related concerns. The way to study how these dimensions interact is through the level of job satisfaction among workers. Most of the studies in economics have been focused on the determinants of job satisfaction in developed countries where labor markets and institutions are well designed, as it is not in developing countries.

The purpose of this paper is to evaluate the relationship between job satisfaction and family conditions in a developing country where there still are significant indicators of the existence of a male dominated culture. The strategy consists on estimating an Ordered Probit Model in which the dependent variable is our subjective index of job satisfaction,

controlled by a set of variables for labor conditions, socioeconomic background and family structure. This strategy is complemented with a robustness analysis where some characteristics of subjective underemployment are included. Our procedure allows us to estimate the probability gaps of being very satisfied, satisfied or non-satisfied, conditioned to different family structures and labor participation.

Our main hypothesis is that these activities, -work and family duties-, are competing for time allocation, and that men and women have a different perception on the family duties. This posits our paper on the branch of the *scarcity* model. In this line, our main interest is to answer the question: Are work and family responsibilities rivals? If the answer is yes, we can provide new evidence on the role that family responsibilities play on job satisfaction in a developing country and at the same time, we can explore to what extent the number of children and the marital status have an effect on the self-reported measure of satisfaction. Thus, the next question to ask is whether differences in family structure imply distinct levels of job satisfaction.

The study of job satisfaction is important because it is the result of the relationships between working conditions and individual outcomes, which are two of the most important spaces for the human being. From an economic approach, income expectations matters for the individual wellbeing, but as Boes and Winkelman (2010) say, when the link between these variables is weak, policies oriented to increase the income levels could generate lesser results than expected and reductions in productivity. From a psychological approach, the importance of job satisfaction for the analysis of happiness and self-motivations in the individual and in family relations is straightforward, so the estimation of this relationship implies to have several controls to avoid weak and biased conclusions. It is possible that the correlation between income and happiness or satisfaction will be strong at low-income levels, but no at the high-income households; it is a non-linear relationship.

For these reasons, choosing one country with high poverty and income concentration levels as well as a male dominant culture like Colombia makes this an interesting case study. Colombia has been characterized during the last decade with a persistently high unemployment rate (above 11.5%), high-income concentration (Gini coefficient of 0.52), and more than half of the population (52%) under the poverty line. But at the same time, is one of the countries where the share of women in employment is closer to 50%, and the gender wage gap is lower than the average of South American countries.

The contribution of the paper is threefold. First, to the best of our knowledge, our approach differs from previous works because of the type of data used in the empirical strategy. We use objective and subjective measures of job satisfaction and our source of information is a nationwide households' survey externally implemented, which guarantees at least three important facts: *i)* the sample and structure of the interviewed population gives us more reliable answers than those surveys in which the worker could have incentives to lie for avoiding problems with their employers; *ii)* The number of people surveyed leads us to obtain statistically significant estimations. Our database consists of 142,361 individuals; *iii)* the sample size and its continuity year by year let the researchers to have a starting point for reproduce and analyze trends over the economic cycle.

Second, the survey content cover several variables which lead us to include control variables such as: number of children under 10 years old, and the job-family compatibility which is used to point out the importance of spending time at home and the opportunity cost of working. Due to the absence of data availability, previous works in economics only

include marital status as a proxy of the importance of marriage on job satisfaction. Then, our specification reduces the probability of getting biased estimations.

Third, the estimation of an Ordered Probit model is a starting point for assessing non-linear differences across individuals. We estimate probability gaps between different population groups, providing new evidence about the relationship between income and self-reported levels of job satisfaction for distinct types of workers.

The structure of the paper is as follows: Section 2 summarizes some of the main works in the literature on job satisfaction and familiar duties. Section 3 presents the data and summarizes the empirical results of the Ordered Probit estimations; it also shows the probability gaps of being at each level of satisfaction between different types of workers as a function of labor income. In Section 4, concluding remarks are presented.

1. RELATED LITERATURE

In order to locate this study into the current state of the art, it is necessary to follow some steps. First, we summarize what the meaning of job satisfaction is, and how it is related to welfare and wellbeing. Second, we summarize the main economic and non-economic theories under job satisfaction. In this part, it is analyzed whether there is any causality between self-perception at work and family responsibilities. Then, the discussion about the type of relationship between job satisfaction and family duties is made from the scarcity and expansion model, which implies to establish if they are substitutes or complements and what are the most recent findings in the available literature.

2.1 Towards a definition of Job satisfaction

Job satisfaction is one of the components of general satisfaction among the population. It includes several dimensions of work such as work content, promotion possibilities, earnings, applicability of acquired knowledge, and job security, (Mora and Carbonell, 2009). Locke (1976) defines the job satisfaction as the individual's subjective valuation of different aspects of their job. Locke (1969, 1976), points out the main aspects of job satisfaction as synonyms of affect and attitude. Thus, like other emotional judgments, job satisfaction arises from a variety of feelings related to the characteristics of the job, like feelings about the working conditions, about the level of earnings, about the risk of losing the job, about the opportunity for personal control, and so on. It is also an indicator of extra utility perceived by a worker, which is not only represented by labor compensation. The intuition behind this is that job satisfaction is a premium additional to salary. Apart from Clark (1997 and 2001) other studies that are explicit about identifying job satisfaction levels with extra value and wellbeing include Blanchflower and Oswald (1999), Frey and Stutzer (2003a and 2003b). In contrast, Levy-Garboua and Montmarquette (2004) and Hamermesh (2001) do not link job satisfaction and utility, because they interpret job satisfaction reports if their actual wellbeing exceeded the expected level. Their *ex-post* concept assumptions answer the question: "would you have chosen this job again?" The idea is that workers express satisfaction to the extent that their current income, job prospects, and working conditions are at least as good as expected. That is, job satisfaction could be understood as a relative measure in which the worker compares its actual situation with the expected one. However, both approaches highlight the capacity of that variable for explaining the actual wellbeing of the worker.

Job satisfaction also represents a proxy of the hedonic value of jobs and as a predictor of job turnover (Weaver, 1978; Freeman, 1978; Lévy-Garboua and Montmarquette, 2004; Sousa-Poza and Sousa-Poza, 2007). This represents the idea of job satisfaction as a relative measure used by the workers for assessing their actual condition and the convenience of changing their actual job. In consequence, job satisfaction is a subjective valuation of different aspects of work with respect to some internal threshold constructed by several variables such as salary, availability of time, promotion possibilities, personal satisfaction, and so on.

The use of subjective wellbeing measures has grown in the literature as a consequence of its importance as predictors of happiness among individuals and as a complement of other normative indexes (per capita income, wealth or physical assets) due to the limited capacity of getting information about their actual contribution to the economic welfare of individuals. In fact, we can have distinct dimensions of human life, such as family and work with different perceptions about its effect on one's welfare. Job satisfaction is one component of the personal happiness which is associated to the self-perception of labor stability, the positive externality of workmates, an index of personal success, and an emotional state resulting from the appraisal of one's job and an attitude towards one's job. This subjective measure has been measured by an ordinal scale or a dichotomous variable. Peiró (2006) and Linley *et al.* (2009) provide a definition of subjective wellbeing based on the combination of happiness (affective and emotional components) and satisfaction (cognitive component). In this line, subjective wellbeing also includes: (a). Satisfaction with our own life (personal judgments). (b). Positive feelings based on grateful experiences. (c). Satisfaction in domains such as work, family, health etc. Van Praag *et al.* (2003) use (a) and (c) for their definition but as Angner (2010) says it also implies to recognize that wellbeing is an instant valuation.

2.2 Determinants of Job satisfaction

Several fields have been concerned with job satisfaction and its implications on other aspects of the human life. The literature about job satisfaction in economics is extensive due to the interest of economics in the field of behavior and psychology which has attracted researches to this topic.¹ Recent contributions in the behavioral economics literature suggest that happiness does not necessarily increase with income, particularly at relatively higher levels of income. That is, because happiness also depends on health and family life experience. It depends as well on the extent to which absolute income gains relative to either one's aspirations or reference groups.

The determinant factors of job satisfaction can be linked with socioeconomic profiles and work related factors (Ivancevich and Donnelly, 1968). In this sense, economic literature has argued three stylized facts of job satisfaction determinants: *i*) an income increase does not necessarily have a positive effect on the job's well-being; *ii*) job satisfaction increases with age; and *iii*) most people tend to overstate their levels of job satisfaction (Lévy-Garboua and Montmarquette, 2004). The effect of age on job satisfaction is U-shaped (Clark, 1997); while formal education increases job well-being (Fabra and Camisón, 2009).

¹ See for example Clark and Oswald (1994, 1996) Borjas (1979), Cabral (2005), Freeman (1979), Groot and van den Brink (1999), Grzywacz and Marks (2000), Hamermesh (1977), Lévy-Garboua and Montmarquette (2004), Mora and Carbonell (2009), Munyae and Mueller (1998), Sousa-Poza and Sousa-Poza (2007), among others.

On the other side, there are other disciplines interested in its study such as sociology, psychology and management. Among the topics covered by this literature we can find: income comparison and work environment, (Idson, 1990); work environment and relations with managers (Gazioglu and Tansel, 2002); and the differences between genders in terms of job satisfaction. An interesting result on the latter states that women tend to report higher levels of job satisfaction despite experiencing apparently worse objective job conditions (Clark, 1997). Bender *et al.* (2006) showed that this is due to the fact that female workers are able to be in jobs that offer higher flexibility. Kaiser (2002) and Moguerou (2002) reported for a sample of European countries that females seem to be more satisfied than their male counterparts. Other remarkable examples of studies from these areas are Blauner (1964), and Herzberg *et al.* (1957), and from the perspective of organizational behavior it is worth to mention Spector (1997). Lydon and Chevalier (2002), showed that job satisfaction increases with wage. Occupational psychology and health research is full with evidence that workers who work more hours per day or per week often tend to experience added stress and fatigue and thus face an additional risk of illness, injury, death, burnout or work and family imbalance, particularly if such work is involuntary (*e.g.* Costa, 1996; Bosma *et al.*, 1998; Robertson *et al.*, 2007).

2.3 Work and family: Are they rivals?

Economic theory suggests that workers face a trade-off when they decide to work. On one hand, they have to sacrifice leisure time, but on the other hand, they receive a compensation (income) for the time devoted to work letting them to increase their consumption set. In terms of an approach known as the scarcity model: The intuition is that the more resources devoted to one domain, the least resources available for another. Hence, the more time an employed individual spends in non-work activities and the greater his or her personal involvement with that, the less committed he or she can be to his or her work (Marks, 1977).² These facts provide us a starting point to the rivalry between work and family responsibilities. For example, during leisure time people enjoy their family, respond for their family duties, construct social networks, and/or enjoy their hobbies, thus having these activities competing for time. As a result, there is the probability, that there would be some cases, in which job tasks have direct or indirect effects on the family. Therefore, individual roles and individual tasks imply a specific allocation of time that could affect the personal wellbeing.

During the last decades, new trends have appeared in family choices due to the increasing participation of women in the workforce: a raising number of working single-parents, dual earner families and the increasing caregiving needs of an aging population. This situation creates new challenges to both women and men to blend work and family duties in their allocation of time (Grzywacz and Marks, 2000). Although, men and women are adopting more egalitarian perspectives on their duties, in some countries such as Colombia, it still exists a division between work and family duties. In spite of this trend, an emerging approach points out a different explanation. Greenhaus and Powell (2006) find that work and family are complements because of the extent to which experiences in one role improves the quality of life in the other one. This explanation supports the hypothesis that some problems in each role can be better solved with a couple, when they share spaces and duties. The set of hypothesis under this approach is known as the expansion model.

² Kirchmeyer (1992) contrasts the scarcity model with the expansion model, where the latter assumes that resources are expandable, in a sample of graduates from a Canadian University.

The relationship between job and family has also been studied from different perspectives as human capital and organizational theory. Some findings suggest that satisfaction is more common among married and women (Bisconti, 1978; Clark *et al.*, 1996). Since the rivalry between home duties and work -from psychology's theories-, it is supportable that there is a strong relationship between life satisfaction and job satisfaction (Iris and Barret, 1972). Frone *et al.* (1994) point out that job and family satisfaction are positively related because they share a common cause or causes. Frone *et al.* (1996) argued that it is necessary to examine simultaneously both work-to-family and family-to-work conflict for getting a more detailed knowledge of the work-family relationship on the employee health. They provide evidence in favor of the congruence hypothesis, indicating that the relationship between job and family satisfaction is better characterized as non-causal. However, most of the studies on human capital are based on the idea that higher productivity is resulting from higher effort and higher involvement in work. From sociology theories, it is found that family-work relations depend on the role assumed by each individual in his work or family.

Despite the focus on conflict, other approaches can be found. Separate works suggest a bidirectional relationship in which work can benefit family life (better personal wellbeing) and that family can benefit work (stress management and psychological support). Among the findings into the study of the family-work benefits and problems, scholars conclude that having a supportive partner and the opportunity to talk through difficulties at work may help individuals to recover from stressful days and to better handle the pressures associated with their jobs, consequently, performing better (Repetti, 1989; Barnett, 1996; Gattiker and Larwood, 1990; Weiss, 1990). In contrast, some works point out that there is a rivalry relationship between them due to time allocation. Then, it is still unclear if there is a negative or positive spillover or both at the same time.

Greenhaus and Parasuraman (1999), and Grzywacz (2002) have proposed a positive interdependency between work and family roles. In their view, there are three ways where participation in multiple roles can produce positive outcomes for individuals. First, work and family experiences can have additive effects on wellbeing, individual's happiness, and perceived quality of life. Second, participation in work as well as in family roles can help to reduce distress in one of them. Third, it can be a positive externality from the effect of positive experiences in one role on the outcomes in the other role, representing a transfer of positive experiences from one to the other.

On the other side, work-family conflict exists, mainly because of time allocation. That is, time devoted to the requirements of one role and strain from participation in one role makes it difficult to fulfill requirements of another; and specific behaviors required by one role make it difficult to fulfill the requirements of another. Time allocation is a constraint when the individual faces working overtime or take-home work, because it may conflict with pressures from her or his partner to give attention to family affairs during evening hours. Bartolome and Evans (1979), point out that this conflict can take two forms: time pressures associated with membership in one role may avoid complying with expectations in the other role and pressures also may have an adverse emotional effect in one role even when one is physically attempting to meet the demands of another role.

Family responsibilities can affect labor productivity, and labor stress can induce discussions at home. In previous literature, some proxies of familiar responsibilities, such as marital status, have been included. For example, Lottinville and Scherman (1988) obtained no significant relationship between marital status and job satisfaction; while, Glass and Camarigg (1992) presented a positive relation between some features of job and the

reduction of family-job conflict. Other documents, as Clark *et al.* (1996), include variables related with familiar responsibilities but without in depth results.

Our contribution consists in analyzing the effect of variables associated with familiar responsibilities on job satisfaction for a developing country, controlling by a specific variable that measures the compatibility between family life and work, and accounting for the differences between men and women. It is difficult to investigate what type of relationship dominates this trade-off, but the interesting thing is that family and work could be seen as complements or substitutes. In economic theory, the need of working to increase income is associated to different utility levels that reduce time and energy for other purposes.

Demirel and Erdamar (2009) say that employee's satisfaction could affect their lives. They studied job satisfaction and family ties in teachers, pointing out that the stronger the family ties, the higher the job satisfaction. Heller and Watson (2005) tested both the concurrent and lagged associations between job and marital satisfaction at a within-individual level, using a diary study of seventy six fully employed, married adults. They also examined the mediating role of mood in this spillover process. Their findings indicated both a concurrent and lagged (job to marital and marital to job) job-marital satisfaction association at the within-subject level, giving some support for the mediating role of mood (most notably positive effect) in these associations. Gross and Arvey (1977) analyzed several aspects of the homemaker job in terms of the dynamic relationship between husband and wife. From their study, it can be inferred that wives' satisfaction with homemaker jobs could be related to the participation of husbands in homemaker tasks and to the husbands' attitudes toward women. It is also found that wives' marital satisfaction is associated to their interaction of the employment status and the satisfaction with the homemaker job.

As it can be seen, workers tend to be more involved in job activities when they perceive it will be useful at individual and familiar level. In contrast to previous literature, this paper introduces an additional subjective variable of the perception of compatibility between work and family. The usefulness of this variable is to isolate those aspects coming from the opportunity cost of working and those related to the work itself.

2. DATA AND RESULTS

Before analyzing the data, it is important to contextualize the case of Colombia in Latin America and mention some stylized facts about the role of women in the labor market. The importance of doing that emerges from the fact Colombia has been characterized as a male dominant culture where women do not have the same opportunities than men.

However, during the period between 1985 and 2007, female labor indicators improve considerably: women's share in the highest decile of the wage distribution grew up to 45%, the average number of schooling years increased from 7.4 to 11.9 being statistically higher than men's average. But at the same time, the percent of households where women is self-reported as head, increased from 21.8 to 33.7.

The data used in this paper comes from the 2007 Colombian National Household Survey, GEIH (*Gran Encuesta Integrada de Hogares*) which is conducted by the National Statistics Department (DANE). Due to the anonymity of the surveyed population, this dataset

avoids some of bias that other types of surveys on the subject of job satisfaction may have. This survey includes information about the 13 main cities and metropolitan areas in Colombia, with a total of 142361 observations representing more than 70% of the Colombian employed population.³

Compared with other Latin American countries, the share of women in the economically active population was 34.9% in 1990 and 42.2% in 2005, meanwhile this share was 32.8% and 39.9 in average for Latin America. Unemployment rates in Colombia have been persistently at the top of the region. In 2007, the unemployment rate was 11% and 16% for males and females, respectively. When the non-agriculture employment is analyzed, it is found that the percentage of women was 48.8% (48.5%) in 2000 (2007), versus 35.7% (37.4%) for Chile and 40.3% (42%) for Brazil. However, gender wage gaps are, with the exception of Argentina, smaller in Colombia than in the rest of Latin America. In terms of urban household average size, Colombia has one of the highest index in South America (3.8 individuals per household) but that is lower than the Central American countries. (ECLAC, 2009).

Some interesting facts emerge from our sample. First, when questioned about the levels of satisfaction at their current jobs, 14% of the individuals declared to be Unsatisfied, 81% Satisfied, and 5% Very Satisfied. From the non-conditional analysis, it was found that more satisfied individuals are in average older, more educated, and better paid⁴. It is also worth to note that workers with smaller families tend to be more satisfied as well as those who have a better perception of their job stability. Another major finding is that employees are more satisfied than the rest of workers, which is probably associated to their perception of stability. Most satisfied individuals also declared a higher level of compatibility between their work journey and their family responsibilities, and live in cities with lower unemployment rates (See Table 1). These findings require an isolated approach in order to get unbiased conclusions from each explanatory variable.

The empirical strategy includes two steps. First, we estimated an Ordered Probit Model in which the dependent variable is the self-reported job satisfaction, which comes from the answer to the following question: *Are you (Unsatisfied, Satisfied, Very satisfied) with your current job?*. The set of explanatory variables is subdivided in three sets: human capital, labor status and family-job interactions. This step lets us analyze the economic and statistical significance of the estimated coefficients. Second, we showed the relationship between the estimated probabilities and the income for different profiles. Both approaches let us extract distinct aspects from the model.

2.1. JOB SATISFACTION DETERMINANTS.

In order to test the relation of job satisfaction with family-job interactions, three variables are introduced: a dummy variable which is 1 if the individual is married or has been living with her or his couple for at least two years (has a permanent couple), which is used as proxy of marital status; the number of children under 10 in the household which represents the parent's demand of time at home; and individual's perception of the compatibility between their work journey and family responsibilities constructed from the question: *Are*

³ Our database does not let us to evaluate the existence of psychiatric disorders: mood, anxiety, substance dependence, and substance abuse as in other interesting papers such as Frone (2000).

⁴ Colombian data suggest that labor income has a positive effect of job satisfaction, but the reduction on the probability of being unsatisfied is higher than the increase on the likelihood of being very satisfied.

your job schedule and the fulfillment of your family obligations (Very compatible, Compatible, Incompatible, and Very incompatible)?

Among the set of human capital control variables, we included gender, age and schooling levels. In the case of labor status, we have occupational position, hourly income (in logs), self-perception of job stability, and the monthly unemployment rate of the city where the individual inhabits. This last variable is included as a control for the perception of external risks among workers.

The determinants of job satisfaction and its relationship with family responsibilities are estimated by four nested Ordered Probit Models (marginal effects are presented in Tables 1 and 2). Our baseline model includes structural determinants: gender and human capital measured through age and education (Model 1). Our findings are similar to previous literature estimates. First, the estimated coefficient shows that women are more satisfied than men at work. Although we can expect that women have a lower level of job satisfaction than men, because of more family responsibilities than men in a developing country where a male dominant culture still prevails (93% of households answered that men are the household head), and a more rigid labor supply than men, the empirical literature has found other explanations. Clark (1997) hypothesizes that this issue is due to women's lower expectations at work which reflects differences in gender personality. Regarding to age, the U-shaped pattern described by Clark *et al.* (1996) is also founded here. This means that as age increases job satisfaction reduces at a decreasing rate. Human capital is also measured by a set of dummy variables of schooling levels. There are no significant differences found between non educated people and those with primary education levels, while having high school and college education elevates the probability of being satisfied and very satisfied, with a higher marginal effect in the former. As it can be seen, the non-linearity in the relationship suggests that only at high human capital levels statistically significant differences exist in terms of job satisfaction.

In addition to these structural determinants, we also include in this baseline model, occupational positions and hourly wages as proxies of work environment and an objective measure of wellbeing, respectively. It is important to emphasize that income is in logarithms following Boes and Winkelman (2010) approach, pointing out that this scale leads to have the same increase in satisfaction by means of larger and larger absolute changes in income. When exploring occupational positions, it is found that public employees are as satisfied at work as the employers (group of reference), while being a private employee or self-employed increases the probability of being *unsatisfied* at work. Hourly income has the expected effect, increasing the probability of being satisfied and very satisfied, and as in the case of higher education the marginal effect of hourly income is higher for the middle level than for the highest level of satisfaction, which implies that for middle income individuals (which are also at the middle level of satisfaction), income has a stronger effect on their job satisfaction, than it does for high income individuals.

These findings are complemented with the inclusion of two pairs of variables. Model 2 includes a set of variables related to the structure of the family: marital status; number of children under 10 at the household, and two interactions (marital status and gender, number of children and gender). The purpose of this strategy is to incorporate gender differences into the perception of responsibilities at home. We should expect that the higher the family responsibilities the lower the satisfaction at work, since work-family rivalry deepens as home duties increase. Contrary to this expectation, women that live with a permanent partner have a lower probability of being unsatisfied at work than single

women; the opposite is true for men. Meanwhile, job satisfaction declines for women as the number of children⁵ under 10 increase, the opposite is true for men. This means that, the familiar responsibilities have a different impact on self-reported job satisfaction for each gender. It is important to note that the estimated coefficients from Model 1 hold when these additional controls are included; the probability gap of being *Very Satisfied* between women and men, increases when individuals have a permanent couple and decreases as the number of children increases; in a few words, family responsibilities related with a couple make men less satisfied, and those related with children reduce women's satisfaction.

Model 3 adds a direct measure of the job-family compatibility, which is the self-reported compatibility between the work schedule and family responsibilities. As expected, the lower the perception of compatibility between job and family responsibilities, the higher the individual's probability of being unsatisfied. This is an interesting finding because it implies that individuals who perceive that their work journey interferes with the family duties are less satisfied at work whatever the length of the work schedule. This finding complements the literature. Recently, Booth and Van Ours (2008) find an increase in women's life satisfaction only once the children are attending school. Additionally, they also find that happiness increase in mothers when they have a job, regardless of how many hours it entails. The estimated coefficients remain with their initial economic and statistical significance. Hence, not only the perception of compatibility between the work schedule and family responsibilities matters, but also the mere existence of these responsibilities has an effect on satisfaction, and this effect is sensible to gender. At the same time, the marginal effect of having higher education is reduced, implying that compatibility between work and family responsibilities is one of the channels through which more educated individuals tend to be more satisfied than less educated ones.

Finally, we included the self-reported perception of job stability and the city's monthly unemployment rate (Model 4). As it was mentioned, the perception of stability has four possible values: *Very stable*, *Stable*, *Unstable*, and *Very unstable*. Unemployment rate is included as an additional explanatory variable to control for the macroeconomic environment. When these controls are added, an interesting result emerges: the dummy for public employee became significant, showing a negative effect of being a public employee on job satisfaction, when compared with employers. This suggests that the high level of job satisfaction declared by public employees is clearly related to the stability of their employment. In Colombia is not unusual to find individuals that have been in the same job at the public sector for more than a decade; people who are unfavorable to risk internalize the certainty of maintaining a job as a reward. The perception of job stability may be interpreted as a microeconomic component (associated to the work place) of stability, while the macroeconomic component (related to the labor market) is measured through the unemployment rate. We found that the higher the stability, both at micro and macro level, the higher the job satisfaction levels.

Since interactions of gender with marital status and with young children (number of children under 10) are included as control variables, it is not clear what marginal effect of gender is. In order to compare the probabilities of being classified at each of the job satisfaction categories, a contingency table by gender is done, considering all the possible combinations of the categories in the variables marital status and number of children under

⁵ We also take into account different measures of the number of children. In particular, we explored the asymmetric effect of number of children under 5 and the number of children under 10; obtaining similar results.

10. Thereby, two transitions might be analyzed separately: how much does the probability of being satisfied change, if an individual is married? And, how much does the probability of being satisfied change, if an individual has a child?

It is found that males have higher probability of being classified as unsatisfied for every combination of marital status and children under 10, except for the case in which a single has a child (Table 3). By computing the odds ratios (that is, it is the ratio of the odds of an event occurring in one reference group to the odds of it occurring in another group used as control) by gender, we have that when an individual is married the odds ratio of being classified as unsatisfied is 0.892 for men and 1.219 for women; while, when an individual married has a child, these indicators take values of 1.037 and 1.097, respectively. Then, having couple seems to produce a negative differential for a man respect a woman, but having a child has the opposite effect.

3.1.1 Robustness checks

Given that our results are supported on 1-item measure job satisfaction, we use other measures for robustness. Our measure of job satisfaction is the worker's general perception on the current job, however, dataset collects rich information of worker's perception on specific aspects of job satisfaction, namely: *i)* number of hours that works, *ii)* skills utilization, *iii)* wage, *iv)* non-wage labor income, and, *v)* working time. These items are commonly used in Colombia for assessing underemployment levels.

The structure of database about these aspects includes the same possible answers: *Unsatisfied*, *Satisfied* and *Very Satisfied*; that let us to have four alternative proxy measures of job satisfaction. First, the components linked with subjective underemployment measures (*i*, *ii*, and *iii*)⁶ were aggregated computing the sum of the three items, but given the wide range of the new variable (from 3 to 9) principal components analysis were applied to get a second alternative job satisfaction measure. Finally, the other two measures were computed by a using the same procedure for the five specific aspects (a summation of the five and a principal components analysis).

The estimation includes the same control variables from the specification of Model 4, but two types of models because of the structure of the dependent variable. Ordered Probit Models were estimated for the two alternative measures constructed as simple aggregation. In the other hand, given that principal components are used for the index, OLS were used. Results, presented in Table A of the Appendix section, are similar in magnitude and statistical significance with respect to our benchmark (Model 4 and Column 1 in Table A), except for variable gender whose coefficient is positive and statistically significant, however, marginal effects (conditional to marital status and children under 10) do not exhibit sign reversals.

Additional robustness checks were considered by estimating Ordered Probit Models for each item of underemployment measure (see Table C). In that case, general results are maintained, but it is worth to mention that unemployment rate only affects the satisfaction with the number of hours that individuals work; while education increases the likelihood of being satisfied with the skills utilization and the number of hours, but it decreases the probability of being satisfied with the wage.

⁶ National Institute of Statistics in Colombia defines as underemployed as the situation in which a worker is employed, but not in the desired capacity, whether in terms of wage compensation, hours worked, or level of skill necessary.

We also include other explanatory variables such as household size, dependence rate (measured as ratio of total employed to total member by household) and dummy variable taking the value of 1 when couple works, to control for labor force structure within household (see Table B in Appendix). Our results point out that household size does not affect the probability of being satisfied (Model B.3); while that if the partner is employed or if the number of employed individuals in the household increases, the probability of being satisfied raises (Models B.4 y B.6). To explore whether domestic services could reduce familiar responsibilities when wife and husband work, an additional interaction is included in Model B.5, but it is not statistically significant. Finally, robustness on unemployment rate effect is tested using a most specific unemployment rate (by region and gender), obtaining Model B.1 which shows that the coefficient is positive and significant.

2.2. JOB SATISFACTION OVER LABOR INCOME: A COMPARATIVE ANALYSIS

The previous findings could be analyzed from a comparative perspective when probability gaps for each level of satisfaction are plotted for different profiles (hypothetical individuals), letting us to have an estimation of relative changes in the probability of being at each level of satisfaction. These graphics are multidimensional as they show how the probability of being in each of the three levels of satisfaction changes. These changes are not absolute but relative as they compare two levels of the same variable, through the entire support of the hourly income. These figures illustrate the differences between predicted probabilities for the most exhaustive model (Model 4).

An Ordered Probit Model assumes that the latent variable, Y^* , follows a lineal representation, and the observable variable Y can be modeled as:

$$Y = j \text{ if and only if } c_{j-1} < Y^* \leq c_j, \quad c_0 = -\infty \text{ and } c_J = \infty \quad (1)$$

Where j is equal to 1, 2,..., J states of Y , c_j and c_{j-1} represent the limits of the interval of Y^* for which the observable variable takes the j -th value. Thus, the probability, $P_i P_i^j$, of belonging to the state j for an hourly income (in logs) i , that runs from the minimum to the maximum value of the log income in the sample, given the individual's profile (\tilde{x}) can be represented by:

$$P_i^j (Y = j | \tilde{x}; \beta) = F(c_j - \tilde{x}'\beta) - F(c_{j-1} - \tilde{x}'\beta) \quad (2)$$

To obtain the probability gap PG_i^j , we define a base profile \tilde{x}_0 to compare the probability of being a satisfaction level j with that of the profile \tilde{x}_1 for each income level i (in logs):

$$PG_i^j = (Y = j | \tilde{x}_1; \beta) - P_i(Y = j | \tilde{x}_0; \beta) \quad (3)$$

For example, in Figure 1a the probability of a man with couple (\tilde{x}_0) to be '*unsatisfied, satisfied or very satisfied*', with that of a woman with couple (\tilde{x}_1) is plotted, over the support of hourly income levels (in logs). In this case, the profile \tilde{x}_0 takes the value of 1 at the gender (male) and marital status (with couple), and the rest of the variables are evaluated at their mean. The difference between profiles \tilde{x}_1 and \tilde{x}_0 is that gender in the former is female. Hence,

positive values of the gap indicate that the probability of being at that level of satisfaction is higher for women with a couple than for men with a couple. There are trade-offs between the three different levels of satisfaction, for log-hourly income levels under 10, the trade-off is between the lowest and middle level, since at these levels of income the predicted probability of being *Very satisfied* is zero, and this trade-off does not change monotonically with the income. For income levels larger than 10, the probability of being *Unsatisfied* is always larger for men than for women, but the gap decreases; the probability of being *Satisfied* is initially greater for women and the gap decreases monotonically until it changes in favor of men; while the probability of being *Very satisfied* is always greater for women and the probability gap increases with income.

When singles are compared (fig. 1b), the probability gaps do not change their sign, indicating that single men tend to be less satisfied than single women. However, differences between singles are one order magnitude smaller than differences for women and men with a couple, implying that gender differences on satisfaction are founded on the perception toward the family responsibilities of each one. It is also important to note that income exacerbates differences between men and women, increasing the differences in favor of women, which backups Clark's (1997) low expectations' findings: If women expect less, they receive a higher reward (income) they tend to be more satisfied than men; in short, as women have less expectations toward their work conditions, income is more efficient in the production of satisfaction for women than it is for men.

In the case of the variable related to the number of children under 10, we estimated the probability gaps between women and men with one child and women and men with three children, in order to account for the difference in the attitude toward child related responsibilities at home. (fig. 1c) As the number of children increases the gap between women and men tend to be greater; this is due to the fact that the likelihood of being *Very Satisfied* decreases more rapidly with the number of children, for women than it does for men.

As income is the support for all density functions, when the probability of being at each level of satisfaction of individuals that perceived a high level of job stability is compared with that of the individuals with the worst perception, results are similar to those of coupled women against coupled men, (fig 1d). The same is true for the perception of compatibility of the work schedule with family responsibilities (fig 1e). In both cases, income increases the probability gap of being '*Very satisfied*', in favor of the group with the better perception, and the non-monotonic behavior of the probabilities of being *Unsatisfied* and *Satisfied* remain. Again, it is important to note the scale, as these perceptions generate bigger probability gaps than those that arose from the gender and marital status interaction.

In Figures 1f to 1h we add another dimension to the analysis as comparison variables have more than two levels. In the case of occupational position employers compared with public and private employees; for age, we compare individuals of 60 years against individuals of 20 and 40 years; and for schooling, individuals with no education are compared against those with High School and College levels. Three results are obtained from these comparisons: *i)* the extremer the comparison the greatest the gap, which is evident from the fact that the only difference between gaps at each satisfaction level is the value of one of the controls of the profile; *ii)* the probability gap of being unsatisfied converges to zero as income increases, and the probability gap of being *Very satisfied* converges to zero as income decreases, this is intuitive through the large positive effect of income on satisfaction; *iii)* the probability of being *Satisfied* converges to zero at a middle level of income, because at

extreme values of income extremers comparisons generate extremers gaps, but the probability gap of being *Satisfied* always have a change of sign. This means that regardless of their characteristics middle income individuals tend to have the same probability of being *Satisfied*.

3. CONCLUDING REMARKS

The study of the relation between job satisfaction and the family responsibilities in a developing country such as Colombia provides interesting findings for the existing literature. The relevant literature on work-family conflict reflects the belief that work and family are interdependent, but, the increasing female labor participation surely erodes their interaction. This paper provides additional evidence to the state of the art. Measurement restrictions are our main restriction because of single scales may not capture the subtlety of a complex variable. First, it is found that there exist different effects according to the gender, age, educational level, occupational position, income, and marital status. Second, similar objective and subjective measures of job compatibility with familiar responsibilities imply similar levels of satisfaction.

In contrast to previous literature, the variables associated with the family include interaction terms that let us to analyze the relationship between gender, number of children and marital status. These interactions allow us to account for the differences between men and women towards their family responsibilities and how this affects their job satisfaction. In particular, we find that men tend to have a lower level of satisfaction at work when they have a permanent partner, while women experienced relative reductions in their satisfaction levels as their number of children increases. This implies that differences in job satisfaction between men and women are not only explained by the differences in their expectations, but also by their different views towards the compatibility between work and family.

Although the relationship between job satisfaction and happiness has been studied previously in the literature, this paper comes with new evidence about the importance of stability in the self-perception of job satisfaction. Both microeconomic (self-reported perception) and macroeconomic (unemployment rate by city) measures of stability have a positive effect on individuals' satisfaction at work. In contrast to previous literature, our estimations provide new evidence towards the importance of taking into account interactions between the variables associated to basic characteristics of the household.

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Table 1. Mean of the Job Satisfaction Determinants/a

Variable	Total	Unsatisfied	Satisfied	Very satisfied
Male	0.5717 (0.4948)	0.5575 (0.4966)	0.5751 (0.4943)	0.5575 (0.4967)
Age	38.224 (12.952)	37.061 (13.015)	38.369 (12.986)	39.118 (12.059)
Primary	0.2093 (0.4068)	0.2732 (0.4456)	0.2073 (0.4054)	0.0689 (0.2533)
High School	0.4767 (0.4994)	0.5141 (0.4998)	0.4777 (0.4995)	0.3621 (0.4806)
College	0.2930 (0.4551)	0.1825 (0.3863)	0.2944 (0.4558)	0.5656 (0.4957)
Private employee	0.4841 (0.4997)	0.4333 (0.4955)	0.4925 (0.4999)	0.4916 (0.4999)
Public employee	0.0616 (0.2404)	0.0133 (0.1149)	0.0633 (0.2435)	0.1641 (0.3704)
Self-employee	0.4057 (0.4910)	0.5323 (0.4989)	0.3949 (0.4888)	0.2330 (0.4227)
Log(Hourly labor income)	13.052 (1.0180)	12.453 (1.0215)	13.103 (0.9669)	13.879 (0.9487)
Marital status	0.5564 (0.4968)	0.5181 (0.4996)	0.5622 (0.4961)	0.5696 (0.4951)
Children under 10	0.7545 (0.9740)	0.8639 (1.0567)	0.7490 (0.9685)	0.5468 (0.7668)
Marital status * Male	0.3616 (0.4804)	0.3369 (0.4726)	0.3659 (0.4816)	0.3610 (0.4803)
Children * Male	0.4377 (0.8419)	0.4665 (0.8928)	0.4407 (0.8433)	0.3150 (0.6487)
Job-Family compatibility	2.8977 (0.3789)	2.8085 (0.4709)	2.9089 (0.3511)	2.9643 (0.4650)
Perception of job stability	2.6504 (0.5950)	2.1958 (0.6264)	2.7038 (0.5404)	3.0478 (0.6642)
Unemployment rate	0.1212 (0.0256)	0.1225 (0.0260)	0.1210 (0.0256)	0.1199 (0.0236)

Standard errors in parentheses.

/a. Tests for equality of means at the lowest and the highest level of satisfaction are rejected for each variable.

Table 2. Marginal effects of Job Satisfaction Determinants (Ordered Probit)

	Model 1		Model 2	
	Pr(y=1)	Pr(y=3)	Pr(y=1)	Pr(y=3)
Male	0.0226*** (0.0015)	-0.0094*** (0.0006)	0.0046* (0.0024)	-0.0019* (0.0010)
Age	0.0035*** (0.0003)	-0.0014*** (0.0001)	0.0034*** (0.0003)	-0.0014*** (0.0001)
Age2	-0.0001*** (0.0000)	0.00001*** (0.0000)	-0.0001*** (0.0000)	0.00001*** (0.0000)
Primary	0.0049 (0.0052)	-0.0019 (0.0021)	0.0059 (0.0052)	-0.0023 (0.0020)
High School	-0.0148*** (0.0051)	0.0061*** (0.0021)	-0.0123** (0.0051)	0.0050** (0.0021)
College	-0.0343*** (0.0049)	0.0157*** (0.0025)	-0.0299*** (0.0050)	0.0135*** (0.0025)
Private employee	0.0479*** (0.0037)	-0.0195*** (0.0015)	0.0477*** (0.0037)	-0.0193*** (0.0015)
Public employee	-0.0016 (0.0045)	0.0007 (0.0019)	-0.0004 (0.0046)	0.0002 (0.0019)
Self-employee	0.0531*** (0.0039)	-0.0203*** (0.0014)	0.0530*** (0.0039)	-0.0202*** (0.0014)
Log(Hourly labor income)	-0.0727*** (0.0009)	0.0297*** (0.0004)	-0.0735*** (0.0009)	0.0299*** (0.0004)
Marital status			-0.0295*** (0.0023)	0.0117*** (0.0009)
Children under 10			0.0101*** (0.0012)	-0.0041*** (0.0005)
Marital status * Male			0.0470*** (0.0033)	-0.0175*** (0.0011)
Children * Male			-0.0062*** (0.0015)	0.0025*** (0.0006)
Observations	142361		142361	
Pseudo R²	0.0809		0.0828	
AIC	157368.2		157048.9	
BIC	157486.6		157206.8	
LL	-78672.11		-78508.47	

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 2. Marginal effects of Job Satisfaction Determinants (Ordered Probit), *cont.*

	Model 3		Model 4	
	Pr(y=1)	Pr(y=3)	Pr(y=1)	Pr(y=3)
Male	0.0054** (0.0023)	-0.0022** (0.0010)	0.0004 (0.0022)	-0.0002 (0.0008)
Age	0.0031*** (0.0003)	-0.0013*** (0.0001)	0.0025*** (0.0003)	-0.0009*** (0.0001)
Age2	-0.00001*** (0.0000)	0.00001*** (0.0000)	-0.00001*** (0.0000)	0.00001*** (0.0000)
Primary	0.0066 (0.0052)	-0.0026 (0.0020)	-0.0001 (0.0048)	0.0001 (0.0018)
High School	-0.0097* (0.0051)	0.0039* (0.0020)	-0.0116** (0.0048)	0.0044** (0.0018)
College	-0.0242*** (0.0050)	0.0105*** (0.0024)	-0.0284*** (0.0046)	0.0119*** (0.0022)
Private employee	0.0441*** (0.0036)	-0.0176*** (0.0014)	0.0517*** (0.0034)	-0.0194*** (0.0013)
Public employee	-0.0014 (0.0045)	0.0006 (0.0018)	0.0103** (0.0045)	-0.0036** (0.0015)
Self-employee	0.0525*** (0.0039)	-0.0197*** (0.0014)	0.0406*** (0.0036)	-0.0144*** (0.0012)
Log(Hourly labor income)	-0.0748*** (0.0009)	0.0300*** (0.0004)	-0.0548*** (0.0009)	0.0206*** (0.0004)
Marital status	-0.0273*** (0.0023)	0.0107*** (0.0009)	-0.0205*** (0.0021)	0.0076*** (0.0008)
Children under 10	0.0093*** (0.0012)	-0.0037*** (0.0005)	0.0094*** (0.0011)	-0.0035*** (0.0004)
Marital status * Male	0.0416*** (0.0032)	-0.0154*** (0.0011)	0.0335*** (0.0031)	-0.0117*** (0.0010)
Children*Male	-0.00571*** (0.0015)	0.0023*** (0.0006)	-0.0054*** (0.0014)	0.0020*** (0.0005)
Job-Family compatibility	-0.0761*** (0.0018)	0.0305*** (0.0008)	-0.0541*** (0.0018)	0.0204*** (0.0007)
Perception of job stability			-0.1081*** (0.0013)	0.0407*** (0.0006)
Unemployment rate			0.1188*** (0.0262)	-0.0448*** (0.0099)
Observations	142361		142361	
Pseudo R²	0.0928		0.1403	
AIC	155345.2		155512.9	
BIC	147212.1		147399.6	
LL	-77655.6		-73587.05	

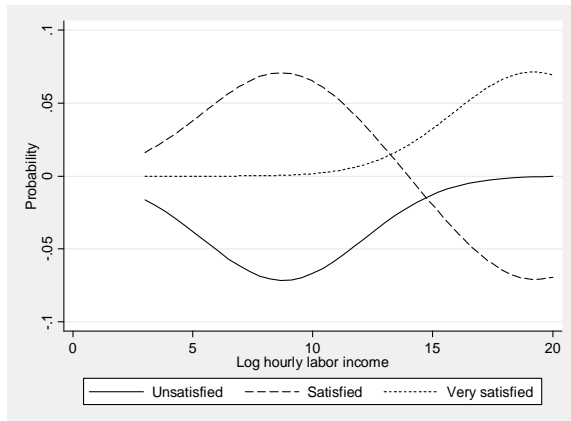
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3. Gender Marginal effects by Marital Status and Number of Children Under 10 years.

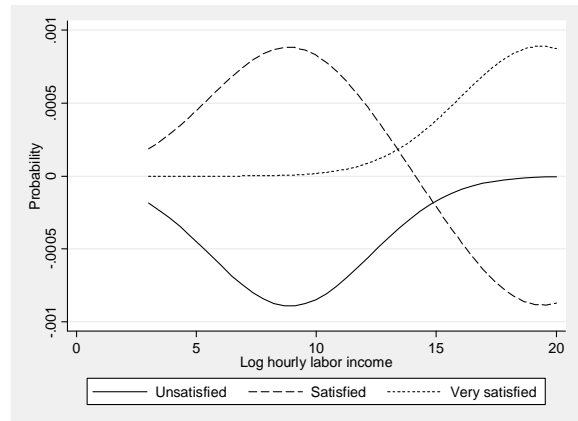
Male							
		Pr(y=1)		Pr(y=2)		Pr(y=3)	
		Without couple	With couple	Without couple	With couple	Without couple	With couple
Children under 10	0	0.1020	0.1143	0.8658	0.8580	0.0322	0.0277
	1	0.1059	0.1185	0.8634	0.8551	0.0307	0.0264
	2	0.1099	0.1229	0.8609	0.8520	0.0292	0.0251
	3	0.1140	0.1274	0.8582	0.8488	0.0278	0.0238
	4	0.1183	0.1319	0.8553	0.8454	0.0264	0.0226
	5	0.1226	0.1366	0.8522	0.8419	0.0251	0.0215
Female							
		Pr(y=1)		Pr(y=2)		Pr(y=3)	
		Without couple	With couple	Without couple	With couple	Without couple	With couple
Children under 10	0	0.1016	0.0833	0.8660	0.8754	0.0324	0.0413
	1	0.1110	0.0914	0.8602	0.8716	0.0289	0.0369
	2	0.1209	0.1001	0.8534	0.8669	0.0256	0.0330
	3	0.1316	0.1094	0.8457	0.8612	0.0227	0.0294
	4	0.1428	0.1193	0.8371	0.8546	0.0201	0.0261
	5	0.1547	0.1298	0.8276	0.8470	0.0177	0.0232

Figure 1. Probability Gaps

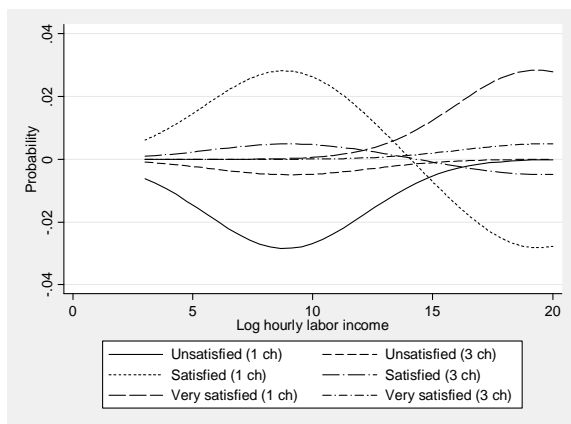
a. With Couple



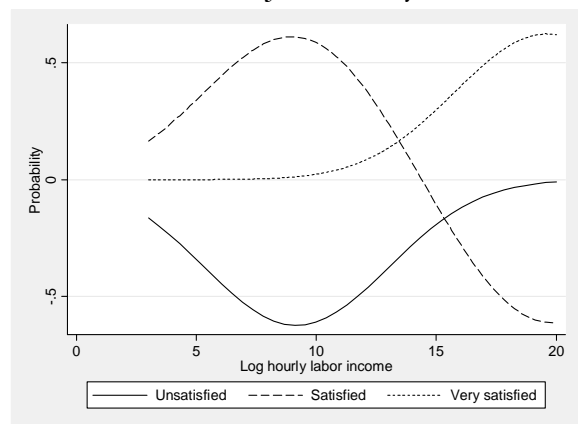
b. Singles



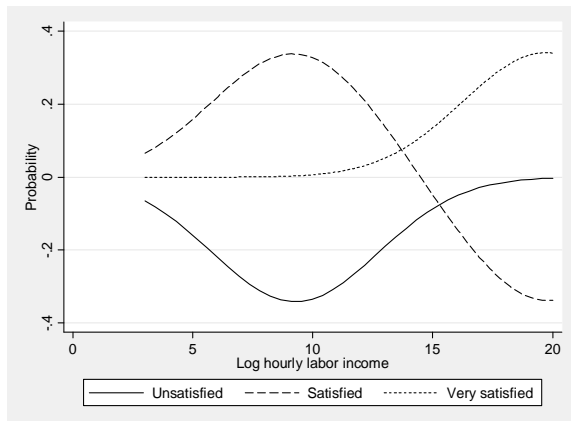
c. Children under 10



d. Job Stability



e. Job-Family Compatibility



f. Occupational Position

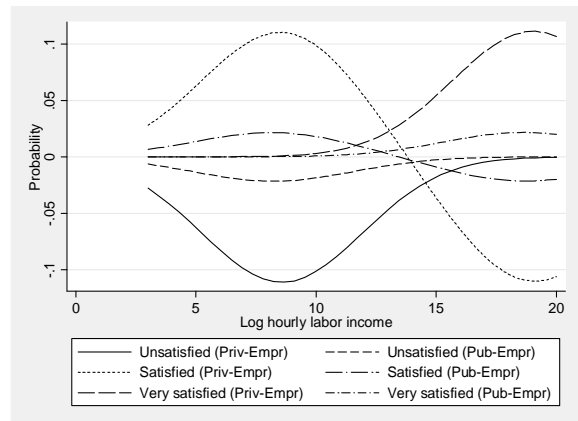
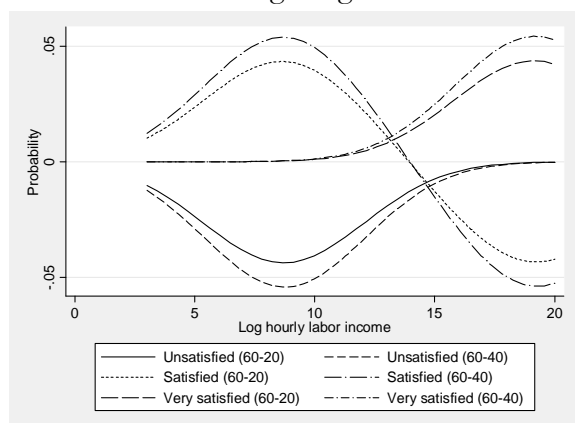
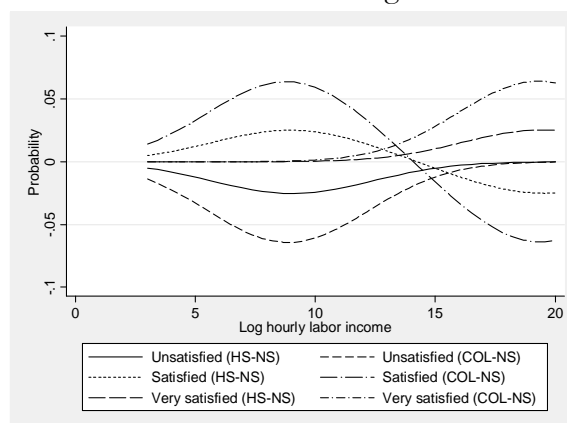


Figure 1. Probability Gaps. *cont*

g. Age



h. Schooling*



* NS: Unschooled, HS: High school, COL: College.