

Gender-Role Attitudes and Earnings: A Multinational Study of Married Women and Men

Lisa T. Stickney · Alison M. Konrad

Published online: 27 September 2007
© Springer Science + Business Media, LLC 2007

Abstract This paper examines the impact of gender-role attitudes on earnings for married individuals. Using hierarchical linear modeling (HLM) and nationally representative data, we tested our hypotheses on 4,785 males and 4,368 females from 28 countries located in North and South America, Eastern and Western Europe, the Mediterranean, Asia and the South Pacific. We found that compared to individuals in their own countries, women with egalitarian attitudes had significantly higher earnings than women with traditional attitudes. In addition, for both women and men, we found an interaction between gender-role attitudes and hours worked. Egalitarianism had a stronger positive effect on earnings among individuals who worked more hours.

Keywords Gender roles · Gender differences · Earnings · Multi-cultural research

An earlier version of this study was presented at the annual meeting of the Eastern Academy of Management (2005) in Springfield, MA.

L. T. Stickney
The Fox School of Business and Management, Temple University,
384 Speakman Hall, 1810 N. 13th Street,
Philadelphia, PA 19122, USA

A. M. Konrad
Richard Ivey School of Business,
The University of Western Ontario,
1151 Richmond Street North,
London, ON N6A 3K7, Canada
e-mail: akonrad@ivey.uwo.ca

L. T. Stickney (✉)
Department of Human Resource Management, Temple University,
1810 N. 13th Street,
Philadelphia, PA 19122, USA
e-mail: Lts@temple.edu

Introduction

Differences in earnings between women and men are well documented (Blau and Kahn 2002; Christie-Mizell 2006; Fortin 2005; Solberg 2005). Researchers have attempted to identify factors contributing to these differences, however, much of the gender difference in earnings persists after accounting for human capital, commitment, and market, job and industry structure (Firestone et al. 1999). As a result, researchers are beginning to look at other explanations for these differences such as gender-role beliefs and ideologies. In this study, we use a multi-level modeling technique to examine the relationship between beliefs about gender-appropriate behaviors and earnings among married women and men in 28 countries. This research is important because, while gender-role beliefs have changed dramatically over the past 50 years, some countries have changed more than others (Fortin 2005). If gender-role beliefs are significantly associated with gender differences in earnings, then changes in these beliefs are likely to lead to a material reduction in gender inequality in our societies.

Extensive research has shown that over time, both men and women have become more egalitarian (less traditional) in their gender-role attitudes (Ciabattari 2001; Fan and Marini 2000; Loo and Thorpe 1998; Wu and Baer 1996). Gender roles are “shared expectations (about appropriate qualities and behaviors) that apply to individuals on the basis of their socially identified gender” (Eagly 1987, p. 12), and gender-role attitudes refer to the individual’s views of the appropriate roles for women and men in the family and in the wider society (Konrad and Harris 2002). The level of importance placed on marital, familial and occupational roles determines the degree of traditionalism and egalitarianism among women and men (Johannesen-Schmidt and Eagly 2002). Egalitarian women place a higher level of importance on occupational roles than traditional women.

They feel it is important to have their own careers and financially contribute to the household. By contrast, attitudinally traditional women place greater emphasis on marital and familial roles, with occupational roles being of secondary importance. Among egalitarian men, marital, family and occupational roles are of equal importance, and they view themselves as participants in all spheres of life. However, among traditional men who perceive themselves as “breadwinners,” occupational roles are of primary importance.

Accompanying the societal shift towards egalitarianism are higher female labor force participation rates as increasing numbers of married women reject traditional roles in favor of paid employment. In the United States (U.S.), the percentage of married women in the paid labor force increased from 41% in 1970 to 61% in 2000, and for married women with children under the age of 6, labor force participation increased from 30% in 1970 to 63% in 2000 (U.S. Department of Commerce 2002). This change is not limited to the U.S., and married women have increased their labor force participation around the world (Nakata and Takehiro 2002; Panayotova and Brayfield 1997; Treas and Widmer 2000).

Despite the increase in female labor force participation, numerous studies have documented that women’s earnings remain significantly below men’s earnings. In the United States, women employed full-time earn about 24% less than men with equal qualifications (Blau and Kahn 2002). Among individuals in the 25 European Union (EU) countries who are employed more than 15 hours per week, women are paid an average of 15% less than men (Eurostat 2006). In New Zealand, women working full-time earn about 18% less than men (Anonymous 2005), and in Japan, women employed full-time earn about 35% less than men (Nakata and Takehiro 2002). The trend is clear; despite significant increases in female labor force participation, women can expect to be paid less than their male counterparts.

Research examining the underlying reasons for differences in pay between men and women has focused primarily on industry and occupational differences. However, these studies have failed to account for a significant portion of the gender pay gap (Adamchik and Bedi 2003; Solberg 2005). Consequently, researchers are beginning to explore alternate explanations for the difference in pay between men and women. One factor that has received little attention is gender-role attitudes, which has been examined in only three studies. The earliest study, utilizing a nationally representative U.S. sample (Firestone et al. 1999) found that traditional gender-role attitudes were negatively associated with individual earnings for both women and men. A study of another national U.S. sample (Christie-Mizell 2006) showed that traditional

gender-role attitudes were negatively associated with earnings for white women, African American men, and African American women and that the effect of traditional attitudes was most detrimental to white women. The third study examined aggregated data from the 25 Organization for Economic Cooperation and Development (OECD) countries and found that traditionalism in gender-role attitudes was associated with a larger pay gap between men and women, while egalitarianism was associated with a smaller pay gap (Fortin 2005).

Our study contributes to this body of evidence by examining national samples of individuals in 28 countries. Using hierarchical linear modeling, we examine the effect of gender-role attitudes on individual earnings net of human capital, occupation, family, and country effects. This methodology enhances the generalizability of findings from the U.S. (Firestone et al. 1999; Christie-Mizell 2006) and overcomes several limitations of Fortin’s (2005) multinational study.

One key limitation of Fortin’s (2005) study is her level of analysis. For both earnings and gender-role attitudes, she used country averages to analyze an individual-level phenomenon. The technique of aggregating individual-level data to a higher (country) level tends to overstate the effects of aggregated individual-level variables while understating higher-level effects (Osborne 2000). By contrast, our analysis uses a multi-level technique which is capable of isolating individual-level effects while simultaneously accounting for differences between countries. A second limitation of Fortin’s (2005) work is that she did not have data on occupation or the presence of children, thus she cannot explore the possibility of occupational segregation or the effect of children on earnings. With our dataset, we are able to account for both of these as well as for differences in education and age, which reflect human capital. Also, Fortin’s (2005) data are restricted to OECD countries. Our analysis of individuals in 28 countries provides greater geographic breadth because our dataset includes the majority of OECD countries plus individuals from non-OECD countries in Asia, Eastern Europe and Latin American.

In addition to these limitations, there are two other key differences between Fortin’s (2005) study and ours. First, we restrict our analysis to married women and men. Much research has shown significant differences exist between married and unmarried women’s and men’s gender-role attitudes (see Fan and Marini 2000; Panayotova and Brayfield 1997; Treas and Widmer 2000). Marriage is likely to affect the association between gender-role attitudes and labor force participation, because unmarried people without children are not likely to conduct substantial amounts of household labor and child care regardless of their gender-role attitudes. The onset of family formation

through marriage creates the arena for substantially more behavioral expression of gender-role attitudes, such that these attitudes are considerably more relevant to the labor market outcomes of married than of unmarried people. The second difference involves earnings. Fortin (2005) examines the aggregate pay differential between women and men, while we examine the effect of gender-role attitudes on earnings for women and men separately. This analysis allows us to explore possible differences in the gender-role attitudes-earnings relationship between men and women. In sum, these differences make our analysis more fine-grained than Fortin's (2005) and enhance understanding of the relationship between gender-role attitudes and pay.

Theoretical Perspectives

There are multiple theoretical perspectives that may help to explain the relationship between gender-role attitudes and earnings. Our analysis employs three of these perspectives: Eagly's (1987) social role theory, Festinger's (1957, 1958) theory of cognitive dissonance, and Becker's (1985) allocation of energy model.

Social role theory posits that the roles people occupy determine their worldviews, including their gender-role attitudes (Eagly 1987). Thus, as people take on different roles, such as breadwinner or homemaker, they adopt attitudes that are consistent with those roles (Eagly and Karau 2002). There are at least two reasons why role occupancy influences people's attitudes. First, individuals may develop a greater understanding of the role, and may change their attitudes as a rational response to better information. For example, longitudinal research has shown that when people form families and find themselves conducting substantial household labor, they increase the importance they place on short, flexible work hours (Konrad 2003).

A second reason that people's attitudes are likely to conform to the social roles they occupy is due to the operation of cognitive dissonance (Festinger 1957). Festinger described dissonance as a psychological state of discomfort that exists when two cognitive or behavioral elements do not fit together. Cognitive dissonance is an inherently motivational force that pushes people to change either their behavior or their cognition in order to achieve consistency or consonance (Elliot and Devine 1994). Hence, people who find themselves in roles that do not match their gender-role attitudes may change either their behavior or their attitudes to achieve consistency. In situations where behavioral change is infeasible, people are likely to modify their attitudes in response to the need to justify their situation (Kroska 1997). For instance, people who experience long layoffs or employment gaps

may enhance their feelings of self-worth by reducing the importance they place on high earnings and increasing the importance of spending time with their families.

In his allocation of energy model, Becker (1985) proposes that workers are adversely affected by their household responsibilities, which despite the significant liberalization of men's gender-role attitudes over time, are still performed primarily by women (Bianchi et al. 2000; Panayotova and Brayfield 1997; Shelton and John 1996). Becker posits that because married women are primarily responsible for childrearing and household labor, they reduce the effort they expend on paid work in order to conserve energy for unpaid work in the family. For this reason, according to Becker, married women are less productive, and their lower earnings compared to their male counterparts is a reflection of this productivity differential. Other authors have questioned the empirical veracity of this argument (Bielby and Bielby 1988), but it continues to be influential in discussions of the gender gap in pay (e.g., Hersch and Stratton 2002). The allocation of energy argument implies that the impact of gender-role attitudes on the allocation of energy between family and paid work is primarily responsible for the statistical association between these attitudes and earnings.

The three perspectives of social role theory, cognitive dissonance and the allocation of energy model help to explain the relationship between earnings and gender-role attitudes. Social role theory and cognitive dissonance arguments suggest that there will be consistency between people's gender-role attitudes and their behavior in the family and in the workplace. The allocation of energy model argues that behavior in the family influences productivity in the workplace, which is ultimately reflected in earnings.

Hypotheses

Given the argument for the consistency between gender-role attitudes and behavior discussed in the previous section, these attitudes are likely to be associated with labor market outcomes, particularly, earnings. The gender-role attitudes of egalitarian women and traditional men are consistent with devotion to the paid work role. Egalitarian women believe that they should share in the provision of income to their families, and traditional men believe that they should be the sole family breadwinners. As a result of these beliefs, egalitarian women more than traditional women and traditional men more than egalitarian men will focus strongly on the paid work role. The value these individuals place on their careers likely affects their workplace behaviors such that they exert more effort on the job and seek more opportunities to increase their earnings. Due to this pattern of behavior, egalitarian women

should earn more than traditional women, and traditional men should earn more than egalitarian men.

Traditional women focus primarily on their home lives, and egalitarian men divide their time and energy between work and family. The paid work role is likely to cause a state of dissonance for these men and women because their values are not completely aligned with a strong focus on career success. Changing one's behavior can reduce dissonance (Elliot and Devine 1994), but due to economic circumstances or social norms, people may be unable to reduce their hours of paid work to alleviate the dissonance. In such cases, people who value greater involvement in family work may reduce the effort they exert on the job, as Becker (1985) argued. Such reduced effort may be enacted as distraction by telephone calls to check on the family or lateness and absenteeism to attend to family matters. Becker (1985) argues that the impact of family on work behaviors can be sufficient to reduce productivity and impact earnings. Thus, we expect greater earnings for individuals whose gender-role attitudes are consistent with a high level of involvement in the paid work role.

H1a The earnings of more egalitarian women are greater than the earnings of more traditional women.

H1b The earnings of more traditional men are greater than the earnings of more egalitarian men.

The relationship between gender-role attitudes and earnings may be moderated by the amount of time spent at work. Becker's (1985) allocation of effort proposition implies that each hour of paid work performed by a person with fewer family responsibilities is more productive than an hour of work performed by a person with more family responsibilities. Because traditional women are likely to perform more household labor than egalitarian women (Batalova and Cohen 2002), Becker's allocation of effort model suggests that added paid work hours increase earnings more strongly for egalitarian women than for traditional women.

Extending Becker's (1985) theory to men means that time spent at work should increase earnings for traditional men more than for egalitarian men. Egalitarian men perform more household labor than traditional men (Batalova and Cohen 2002), with the result that traditional men have more energy to expend on their paid work (Becker 1985).

H2a For women, the relationship between gender-role attitudes and earnings is moderated by average hours worked per week, such that earnings will increase by a greater amount for egalitarian women working more hours than for traditional women working more hours.

H2b For men, the relationship between gender-role attitudes and earnings is moderated by average hours worked per week, such that earnings will increase by a greater amount for traditional men working more hours than for egalitarian men working more hours.

Method

The data for the empirical analyses came from the International Social Survey Program (ISSP), a continuing annual cross-national research program. After annual topics are selected, questionnaires are drafted in British English, pre-tested, and then translated into other languages. Following final approval by the ISSP, the questionnaires are administered in all participating nations. Each national sample is randomly selected and is designed to be demographically representative of the adult population in each of the countries (ISSP Working Principles 2003). The data on Family and Changing Gender-roles were collected in 35 countries in 2002. However, due to missing data only 28 countries were included in this study. The final sample is comprised of 4,785 male and 4,368 female adults, all of whom were married (or living as married) and were employed at least part-time.

Measure

Gender-role attitudes were assessed using an index created from the following five items: a pre-school child is likely to suffer if his or her mother works; all in all, family life suffers when the woman has a full-time job; a job is all right, but what most women really want is a home and children; both the man and the woman should contribute to the household income, and a husband's job is to earn money; a wife's job is to look after the home and family. Prior research using the ISSP datasets identified these five items as being the most comparable cross-nationally (Braun 1998). The items were assessed on a 5-point scale (1=Strongly Agree, 5=Strongly Disagree). Both should contribute to household income was reverse coded so that for all questions a higher score represents a more egalitarian attitude.

A principal component analysis produced a one-factor solution using four of the items: a pre-school child suffers with a working mother; family life suffers with a working mother; most women want a home and children, and a husband earns money & a wife looks after the home and family. The factor explained 55.6% of the variance in the items and had a reliability of .73. The Gender-Role Attitude

Index (GRAI) was created by averaging scores on these four items. The remaining item, both should contribute to the household income, was dropped from the analysis.

In the original datasets, respondents' *earnings* were reported in the currency of the country of residence and thus were not comparable cross-nationally. Several steps needed to be taken in order to make earnings cross-nationally comparable. First, if necessary, respondent's earnings were annualized. Next, earnings were log transformed to reduce skewness as suggested by Tabachnick and Fidell (2001). Finally, the log of the annualized earnings was standardized within each country to produce a cross-nationally comparable measure.

Age and education were included as controls because in general, they are positively associated with earnings. The highest level of education attained was dummy coded into one of three possible categories: less than high school, high school diploma or equivalent, and college/university (1=yes, 0=no). We are including number of children as a control because prior research has shown that children in the household may impact earnings for both women (Christie-Mizell 2006; Eastough and Miller 2004) and men (Firestone et al. 1999). Since occupational differences are associated with earnings, occupation was used as a control. In the original dataset, occupation was coded as a four-digit number based on the International Standard Classification of Occupations. Occupation was recoded into 1 of 11 categories: armed forces, legislators and senior political officers, management, professionals, technical workers, administrative and clerical, sales and service workers, fishing and agricultural workers, craft and trade workers, blue-collar semi-skilled, and laborers. Each of these occupations was dummy coded (1=yes, 0=no). Average hours worked per week is the final control. It is included because it reflects productivity or value-added to the employer. Descriptive statistics and correlations for all measures used in the study can be found in Table 1.

Results

Table 2 contains the number of respondents, and the means and standard deviations for GRAI by sex and country, and the results of a *t* test on the difference in means between women's and men's GRAI. The grand mean for GRAI was 2.90 (SD=.91) for males and 3.21 (SD=.96) for females on a five-point scale, indicating that on average, married males and females are slightly more egalitarian than traditional, and that females are more egalitarian than males ($t=16.19$, $df=9,151$, $p<.001$). Males (GRAI=2.15, SD=.96) and females (GRAI=2.36, SD=.90) in Brazil held the most traditional attitudes, and those in Denmark were the most

egalitarian (Male GRAI=3.87, SD=1.00; Female GRAI=4.14, SD=.88). The country with the largest absolute difference between male and female gender-role attitudes was Austria (.537), while individuals in the Philippines had the smallest difference (.002). The results of *t* tests indicate the difference in Austria was significant ($t=5.40$, $df=370$, $p<.001$), while the difference in the Philippines was not ($t=.024$, $df=437$, $p=.98$).

A preliminary analysis was performed to ascertain whether married women earned less than their male counterparts in our dataset. This analysis consisted of 28 hierarchical regressions, one for each country. The dependent variable was standardized earnings. The first step in the regressions included the controls: age, education, hours worked, number of children, and the occupation dummy variables. Less than high school was the comparison category for education, and fishing and agricultural workers was the comparison standard for occupation. In step 2, the independent variable, gender (1=male, 2=female) was entered. The results of the second step in the regressions, the squared multiple correlation from the second step, and the overall model results are depicted in Table 3. All 28 models were significant, and the variance in earnings explained by the models ranged from a low of 19.0% (Russia) to a high of 69.4% (Japan). The significant and negative coefficient on gender in 26 of the regressions indicates that women earned significantly less than men after accounting for demographic and work-related controls. Only in Mexico and Slovenia was the coefficient on gender non-significant, indicating no difference in earnings between women and men.

The hypotheses were tested with hierarchical linear modeling (HLM), a model building technique which allows for the analysis of multi-level data. HLM recognizes that individuals nested within groups may be more similar to each other than individuals from different groups. HLM does this by simultaneously accounting for variances and covariances both within and between levels (Raudenbush and Bryk 2002). In our models, since we do not include any country level variables, HLM is being used solely to segregate between- and within-country variances.

Model building in HLM begins by creating a null or unconditioned model which contains only the dependent variable (i.e. no predictors). In this model, the chi-square statistic for both females ($\chi^2_{(27)}=165.58$, $p<.001$) and males ($\chi^2_{(27)}=171.43$, $p<.001$) was significant. This indicates that despite standardization, the distribution of the underlying earnings between countries contained sufficient variation to warrant the use of HLM. A second model, the main effects model, was created by adding age, status, education, hours worked, number of children, the occupation dummy variables and GRAI to the null model. In this model, the independent variables were centered on their

Table 1 Descriptives statistics and correlations.

1		Males					Females					
		Mean	SD	N	Mean	SD	N	Mean	SD	N		
		44.04	10.95	4,785	41.13	9.92	4,368					
2	Age	.42	.49	4,785	.34	.47	4,368	.108***	.130***	-.100***	-.030*	-.035*
3	Highest education level	.39	.49	4,785	.47	.50	4,368	-.137***	-.682***	-.672***	-.349***	-.044**
4	Less than high school	.19	.39	4,785	.36	.39	4,368	.034*	-.412***	-.385***	-.459***	.035*
5	High school or equivalent	45.58	13.04	4,785	36.49	12.67	4,368	-.071***	.014	.014	-.015	.008
6	College or university	1.24	1.27	4,785	1.16	1.17	4,368	-.312***	.022	.006	-.036*	.078***
7	Hours worked weekly	.01	.08	4,785	.00	.02	4,368	-.038**	-.008	.008	-.000	.001
8	Number of children	.01	.09	4,785	.00	.06	4,368	.033*	-.034*	-.004	-.048***	-.003
9	Occupations	.12	.32	4,785	.07	.25	4,368	.083***	-.128***	.019	.137***	-.079***
10	Armed forces	.13	.34	4,785	.16	.37	4,368	.040**	-.291***	-.126***	.524***	-.051***
11	Senior government officials and legislators	.14	.34	4,785	.20	.40	4,368	-.039**	-.169***	.145***	.033*	-.038**
12	Management	.05	.21	4,785	.17	.38	4,368	-.011	.008	.015	-.029*	-.038**
13	Professionals	.08	.27	4,785	.20	.40	4,368	-.040**	-.005	.067***	-.078***	.039**
14	Technical workers	.06	.24	4,785	.02	.13	4,368	.105***	.177***	-.086***	-.117***	.083***
15	Administrative and clerical	.22	.41	4,785	.04	.20	4,368	-.060***	.197***	-.011	-.234***	-.042**
16	Sales and service workers	.12	.32	4,785	.03	.17	4,368	-.034*	.121***	.010	-.165***	.034*
17	Fish, forestry and agriculture	.08	.27	4,785	.11	.31	4,368	-.013	.137***	-.046**	-.115***	-.041**
18	Craft and trade workers	2.90	.91	4,785	3.21	.96	4,368	-.074***	-.229***	.069***	.202***	-.068***
19	Blue collar semi-skilled	.41	.93	4,785	-.30	.97	4,368	.022	-.322***	.036*	.362***	.144***
	Gender role attitudes index											
	Earnings (standardized and Ln)											

1		Males					Females				
		Mean	SD	N	Mean	SD	N	Mean	SD	N	
		44.04	10.95	4,785	41.13	9.92	4,368				
2	Age	.056***	.009	-.052***	-.033*	.009	-.003	-.003	.079***	-.043**	.007
3	Highest education level	-.050**	-.284***	-.216***	-.016	.184***	.083***	.097***	.101***	.291***	-.309***
4	Less than high school	.011	-.134***	.151***	.132***	-.014	-.029	-.022	-.034*	-.149***	.074***
5	High school or equivalent	.016	.017	.039*	-.014	-.202***	-.062***	-.088***	-.078***	-.160***	.176***
6	College or university	-.051***	.150***	-.044**	-.047**	-.025	.077***	.041**	.052***	-.077***	.341***
7	Hours worked weekly	-.012	-.043**	.000	-.028	.047**	.024	-.024	-.008	-.075***	.341***
8	Number of children	-.006	-.009	-.011	-.010	-.011	-.003	-.004	-.004	-.007	.014
9	Occupations	-.009	-.028	-.032*	-.029	-.032*	-.009	-.013	-.022	-.027	.018
10	Armed forces	-.033*	-.118***	-.137***	-.124***	-.136***	-.037*	-.056***	-.047**	.030*	.174***
11	Senior government officials and legislators	-.036*	-.140***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
12	Management	-.032*	-.144***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
13	Professionals	-.026	-.144***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
14	Technical workers	-.018	-.144***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
15	Sales and service workers	-.024	-.144***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
16	Fish, forestry and agriculture	-.024	-.144***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
17	Craft and trade workers	-.024	-.144***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
18	Blue collar semi-skilled	-.024	-.144***	-.219***	-.198***	-.216***	-.059***	-.089***	-.075***	.173***	.288***
19	Gender role attitudes index	.010	.157***	.084***	.017	-.035*	-.130***	-.079***	-.066***	-.234***	.178***
	Earnings (standardized and Ln)	.028*	.264***	.122***	-.011	-.071***	-.226***	-.115***	-.102***	.154***	.178***

Correlations above the diagonal are for females, and those below are for males. The education level and occupation variables are dummy coded (1=yes, 0=no). The value of the gender role attitudes index is between 1 (traditional) and 5 (egalitarian).

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

Table 2 Sample sizes and gender role attitude index by country.

Country	Males			Females			<i>t</i> statistic
	<i>N</i>	Mean	SD	<i>N</i>	Mean	SD	
Australia	107	3.08	.82	97	3.40	.84	2.81**
Austria	163	2.68	.93	209	3.21	.97	5.40***
Brazil	184	2.15	.96	98	2.36	.90	1.76
Chile	221	2.38	.69	107	2.39	.60	.12
Cyprus	193	3.07	.61	185	3.42	.52	5.87***
Czech Republic	76	2.57	.70	71	2.75	1.11	1.24
Denmark	169	3.87	1.00	218	4.14	.88	2.87**
Finland	175	3.35	.82	198	3.68	.74	4.07***
France	192	3.21	1.01	348	3.56	.93	4.16***
Germany (former West)	128	3.15	.77	83	3.62	.97	3.95***
Great Britain	302	3.30	.78	312	3.57	.80	4.18***
Hungary	106	2.60	.90	79	2.65	.85	.36
Israel	156	2.97	.88	180	3.27	.91	3.01**
Japan	179	3.25	.96	135	3.51	.98	2.33*
Latvia	134	2.60	.72	123	2.66	.74	.65
Mexico	155	2.52	.75	101	2.49	.92	-.29
Northern Ireland	93	3.40	.88	92	3.44	.88	.31
Philippines	292	2.50	.69	147	2.50	.71	-.02
Poland	160	2.73	.83	160	3.02	.85	3.07**
Portugal	118	2.68	.80	148	2.88	.79	2.00*
Russia	181	2.42	.75	197	2.53	.74	1.39
Slovak Republic	176	2.49	.82	212	2.66	.94	1.89
Slovenia	116	2.93	.70	92	2.97	.82	.41
Spain	260	3.08	.87	154	3.47	.74	4.67***
Sweden	142	3.49	.90	161	3.74	.87	2.51*
Switzerland	125	2.90	.87	68	3.24	.86	2.57*
Taiwan	333	2.75	.60	226	3.05	.60	5.82***
USA	149	3.18	1.01	167	3.64	1.03	3.92***
Totals or means	4,785	2.90	.91	4,368	3.21	.96	

The value of the gender role attitude index is between 1 (traditional) and 5 (egalitarian). The *t* statistic indicates the results of a t-test on the difference in GRAI between women and men. A positive sign on the *t* statistic indicates women had more egalitarian gender-role attitudes than men.

* $p < .05$

** $p < .01$

*** $p < .001$

country means prior to analysis. When using group-mean centering, HLM calculates the expected value of the dependent variable relative to group membership (Hofmann and Gavin 1998). Thus, in our analyses, the earnings projected by the equations are based on an individual who holds gender-role attitudes typical for his or her country. The third and final model was created by the addition of the multiplicative interaction between GRAI and hours worked weekly. The final parameter estimates for both females and males are shown in Table 4.

Hypothesis 1a predicted that egalitarian women would have higher earnings than traditional women. This hypothesis was supported as shown by the significant positive parameter estimates on GRAI in both the main effects ($b = .121$, $SE = .014$; $p < .001$) and the full model ($b = .145$, $SE = .020$; $p < .001$). Hypothesis 1b expected earnings for traditional men to be

higher than earnings for egalitarian men. The non-significant coefficient on GRAI in both the main effects ($b = .023$, $SE = .019$; $p = .22$) and full model ($b = .006$, $SE = .021$; $p = .75$) did not support this hypothesis.

H2a predicted that for women there would be a positive interaction between more egalitarian gender-role attitudes and average hours worked each week. This hypothesis was supported as indicated by the positive, significant coefficient on the interaction term ($b = .005$, $SE = .002$; $p < .01$). The relationship between gender-role attitudes and earnings was moderated by hours worked such that hours worked had a stronger positive effect on earnings for women who held more egalitarian attitudes than for women who held more traditional attitudes. Figure 1 depicts the results of this interaction by plotting predicted earnings for female respondents one standard deviation above and below the

Table 3 Standardized coefficients for sex in regressions predicting earnings.

Country	Sex final β	Change in R^2	Overall R^2 (adjusted)	Model F
Australia	-.148*	.015*	.372	10.96***
Austria	-.360***	.076***	.482	22.58***
Brazil	-.193***	.030***	.329	10.17***
Chile	-.217***	.035***	.538	28.16***
Cyprus	-.342***	.070***	.610	43.16***
Czech Republic	-.350***	.078***	.221	3.96***
Denmark	-.295***	.053***	.489	25.59***
Finland	-.100*	.008*	.278	9.94***
France	-.184***	.020***	.549	42.08***
Germany (former West)	-.358***	.072***	.623	24.08***
Great Britain	-.254***	.040***	.530	47.15***
Hungary	-.242***	.035**	.397	9.06***
Israel	-.191***	.024***	.424	16.42***
Japan	-.437***	.104***	.694	48.42***
Latvia	-.230***	.036***	.262	7.07***
Mexico	-.102	.008	.310	8.63***
Northern Ireland	-.298***	.045***	.559	17.65***
Philippines	-.277***	.062***	.239	10.15***
Poland	-.245***	.043***	.367	13.35***
Portugal	-.234***	.041***	.565	23.95***
Russia	-.218***	.034***	.190	6.90***
Slovak Republic	-.336***	.084***	.508	27.65***
Slovenia	-.032	.001	.388	9.73***
Spain	-.259***	.044***	.468	23.73***
Sweden	-.273***	.055***	.262	8.15***
Switzerland	-.371***	.083***	.538	15.93***
Taiwan	-.271***	.057***	.472	34.28***
USA	-.202**	.027**	.235	7.45***

All regression include age, education, number of children in household, occupation, and hours worked as controls. The value of sex is either 1 (male) or 2 (female).

* $p < .05$

** $p < .01$

*** $p < .001$

sample mean on hours worked and on GRAI, and at the sample mean on all other variables. In the graph, egalitarian women who worked more hours had higher earnings than did traditional women who worked more hours.

H2b predicted that for men who worked a greater number of hours, traditionalism would be associated with higher earnings than egalitarianism. There was no support for this hypothesis. The coefficient ($b = .004$, $SE = .001$; $p < .01$) on the interaction term for males was significant, but it was in the direction opposite of that predicted. The interaction plot indicates that the interaction between hours worked

and gender-role attitudes has the same effect on earnings for males as for females. Earnings for egalitarian men who worked more hours were higher than for traditional men who worked more hours.

Discussion

This study examines factors affecting earnings for women and men in 28 countries. Consistent with extant research, in 26 of the countries examined, married women were found to earn significantly less than married men after accounting for age, number of children in the household, education, hours worked and occupational differences. Only in Mexico and Slovenia, were there no significant differences in earnings between married women and married men. However, even after controlling for these demographic and work-related factors, much of the variance in earnings remained unexplained. To further understand what factors may contribute to these earnings differentials, we extended Fortin's (2005) multinational work and examined the relationship between an individual's gender-role ideology and his or her annual earnings. Findings indicate that compared to other individuals in their countries, egalitarian gender-role attitudes have a positive effect on earnings for married women and no effect on earnings for married men, after accounting for age, education and occupational differences, and differences in the number of children and hours worked.

In addition to the direct relationship between gender-role attitudes and earnings, we explored a possible interaction between hours worked and gender-role attitudes. A positive relationship between work hours and earnings among more egalitarian individuals was identified. Married men and women with egalitarian gender-role attitudes increased their earnings more substantially with increased work hours than their counterparts with more traditional attitudes.

The findings for women are generally consistent with the social role perspective (Eagly and Karau 2002) and the allocation of energy model (Becker 1985). The importance egalitarian women place on their work life reflects their gender-role attitudes and results in a stronger focus on paid work, which manifests itself in behaviors leading to higher earnings. Traditional women who place primary importance on their household responsibilities are likely to exert more energy in the household sphere and thus have lower earnings relative to egalitarian women who spend a greater amount of their energy in the work sphere.

Among men, no direct relationship was found between gender-role attitudes and annual earnings. The lack of a direct relationship may be due to the fact that in recent decades, men's roles have changed less quickly than women's roles. While men's gender-role attitudes have

Table 4 Results of hierarchical linear modeling predicting earnings.

Variable	Females				Males			
	Main effects		Full model		Main effects		Full model	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Constant	-.299***	.038	-.225***	.036	-.412***	.032	.365***	.036
Age	.007***	.002	.007***	.002	.005*	.002	.005*	.002
Education level								
HS diploma or equivalent	.262***	.045	.261***	.044	.319***	.036	.320***	.036
College or university	.584***	.073	.578***	.075	.682***	.064	.683***	.064
Number of children	-.008	.014	-.007	.014	.012	.011	.012	
Occupations								
Armed forces	.996***	.129	.994***	.123	.985***	.154	.977***	.156
Senior government officials and legislators	.700*	.327	.683*	.327	.930***	.180	.921***	.176
Management	1.002***	.129	.990***	.122	1.098***	.106	1.089***	.105
Professionals	.973***	.104	.961***	.100	1.035***	.086	1.032***	.084
Technical workers	.806***	.109	.795***	.106	.907***	.091	.901***	.089
Administrative and clerical	.678***	.118	.668***	.113	.671***	.099	.664***	.097
Sales and service workers	.317**	.120	.306**	.117	.501***	.077	.498***	.077
Craft and trade workers	.389*	.154	.376*	.150	.626***	.085	.621***	.084
Blue collar semi-skilled	.420**	.140	.414**	.137	.551***	.081	.548***	.081
Laborers	.173	.111	.159	.108	.272**	.090	.266**	.090
Hours worked weekly	.022***	.003	.008	.006	.011***	.002	.000	.004
Gender-role attitude index	.121***	.014	.145***	.020	.023	.019	.007	.021
GRAI×hours worked weekly			.005**	.002			.004**	.001
Level-1 variance	.599		.597		.612		.610	
Level-2 variance	.039		.023		.027		.027	
N	4,368		4,368		4,785		4,785	

The comparison category for occupation is “fishing and agricultural workers,” and for education it is “less than high school.” The education level and occupation variables are dummy coded (1=yes, 0=no). The value of the gender role attitudes index is between 1 (traditional) and 5 (egalitarian).

* $p < .05$

** $p < .01$

*** $p < .001$

become more egalitarian over time (Bolzendahl and Myers 2004), the amount of household labor they perform remains well below parity with women (Bianchi et al. 2000). Hence, the difference in hours of household labor performed by men with egalitarian attitudes may not differ very much from their traditional counterparts, with the result that gender-role attitudes show no significant association with earnings.

In addition and contrary to our hypothesis, we found a positive interaction between gender-role attitudes and work hours among men. Working more hours had a stronger positive effect on earnings for egalitarian men than for their traditional counterparts. This finding is consistent with that of Firestone et al. (1999), who found that traditional gender-role attitudes were negatively associated with earnings for both women and men in the U.S. Those authors provided no explanation for the negative effect of traditional attitudes on men, other than saying it demonstrates general socialization effects on earnings. We suggest that this result may be due to occupational segregation. To

test the possibility that egalitarian men are more likely than traditional men to be in occupations that pay higher earnings, we ran an ANOVA comparing gender-role attitudes among the 11 occupations for males in our

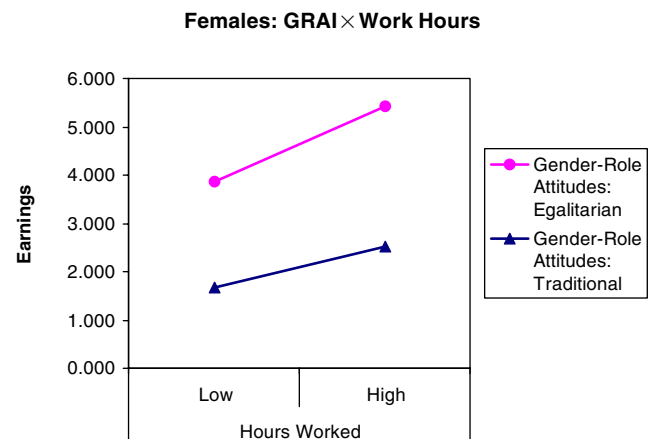


Fig. 1 Plot of the interactive effect of hours worked and gender-role attitudes on respondent's earnings for female respondents.

sample. The ANOVA results ($F_{(10,4774)}=36.70$, $p<.001$) indicated that there are significant differences in gender-role attitudes between occupations. The ANOVA was followed by a Tukey post hoc which showed that men employed in higher-skilled, higher-paying occupations (professionals, management, senior government officials & legislators, technical workers, armed forces, and administrative and clerical) held significantly more egalitarian gender-role attitudes than men employed in lower-skilled, lower-paying occupations (sales and service, craft and trades, blue-collar semi-skilled, laborers, and fish, forest and agriculture). Indeed, other researchers have marshaled evidence for the proposition that men with little autonomy or authority in the workplace compensate for those deficits by demanding a traditional authority role in the home and refusing to perform housework (Arrighi and Maume 2000).

Strengths, Limitations and Conclusion

This study has several strengths worth noting. First, the dataset is substantial: 9,153 respondents from 28 countries provided complete data for the analyses. Second, the data are nationally representative in each of the countries included. A third strength is the use of multi-level modeling to test the hypotheses. Multi-level modeling techniques produce more accurate parameter estimates by accounting for the effects at both the country and individual levels of analysis on the outcome variable (Osborne 2000).

One limitation of this study involves trying to assess the factors that contribute to earnings across a variety of countries. Since the rules governing work and earnings are a function of both the legal environment and business institutions which vary by country, we cannot accurately assess the impact of those factors on earnings. For example, although a distinction between hourly and salaried workers is common in many industrialized countries, it cannot be assumed that all salaried workers in all 28 countries studied do not get paid for overtime worked, as is common practice in the United States and Canada.

A question raised by this study is whether the earnings of egalitarian people are higher, or whether people with higher earnings are more egalitarian. Social role theory suggests that people adopt attitudes congruent with the groups with which they identify and that these roles serve to sustain or inhibit behavior (Eagly 1987), as does the desire to be in a state of consonance (Festinger 1958). If individuals in higher-paying occupations find themselves in a social milieu where more egalitarian attitudes are viewed as more acceptable, then occupational socialization might reinforce such attitudes, creating a class difference. To test whether the social role one adopts, or the social class of one's parents, educational experiences, or occupational socialization, or the allocation of energy in paid and unpaid

work duties are responsible for the association between egalitarianism and higher earnings, a truly longitudinal dataset would be needed in which the same set of respondents was surveyed at multiple points in time in large, representative samples from multiple countries. To our knowledge, such a dataset does not exist, and the ISSP data provide a unique opportunity to examine gender-role attitudes and earnings in a multi-national environment.

Overall, the results of this study extend previous work and show an association between egalitarian gender-role attitudes and higher individual earnings for women, but not for men. Additionally, for both men and women, there were interactions between gender-role attitudes and hours worked per week, indicating that egalitarianism had a stronger positive effect on earnings for those who worked more hours. These findings give merit to the allocation of energy model for women and suggest that both social roles and the desire to be in a state of consonance can underlie a relationship between gender-role attitude and earnings among individuals in a large number of countries.

Acknowledgment We would like to thank three anonymous reviewers, Joan C. Chrisler, the previous editor, and Irene H. Frieze, the current editor for their efforts and insight. The first author would like to thank the Human Resource Management department and the Center for International Business Education and Research (CIBER), both at Temple University for providing financial support in the acquisition of the data and the presentation of an earlier version of this study.x

References

- Adamchik, V. A., & Bedi, A. S. (2003). Gender pay differentials during the transition in Poland. *Economics of Transition*, *11*, 697–726.
- Anonymous (2005). Gender pay gap widens. *New Zealand Management*, *52*(10), 8.
- Arrighi, B. A., & Maume Jr., D. J. (2000). Workplace subordination and men's avoidance of housework. *Journal of Family Issues*, *21*, 464–487.
- Batalova, J. A., & Cohen, P. N. (2002). Premarital cohabitation and housework: Couples in cross-national perspective. *Journal of Marriage and Family*, *64*, 743–755.
- Becker, G. S. (1985). Human capital, effort, and the sexual division of labor. *Journal of Labor Economics*, *3*, S33–S58.
- Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social Forces*, *79*, 191–228.
- Bielby, D., & Bielby, W. (1988). She works hard for the money: Household responsibilities and the allocation of work effort. *American Journal of Sociology*, *93*, 1031–1059.
- Blau, F. D., & Kahn, L. M. (2002). Gender differences in pay. *Journal of Economic Perspectives*, *14*(4), 75–99.
- Bolzendahl, C. I., & Myers, D. J. (2004). Feminist attitudes and support for gender equality: Opinion change in women and men, 1974–1998. *Social Forces*, *83*, 759–789.
- Braun, M. (1998). Gender roles. In J. W. van Deth (Ed.) *Comparative politics: The problem of equivalence* (pp. 111–134). London: Routledge.

- Ciabattari, T. (2001). Changes in men's conservative gender ideologies: Cohort and period influences. *Gender & Society, 15*, 574–591.
- Christie-Mizell, C. A. (2006). The effects of traditional family and gender ideology on earnings: Race and gender differences. *Journal of Family and Economic Issues, 27*, 48–71.
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale, NJ: Lawrence Erlbaum Associates Inc.
- Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review, 109*, 573–598.
- Eastough, K., & Miller, P. W. (2004). The gender wage gap in paid-and self-employment in Australia. *Australian Economic Papers, 43*, 257–276.
- Elliot, A. J., & Devine, P. G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. *Journal of Personality & Social Psychology, 67*, 382–394.
- Eurostat (2006). A statistical view of the life of women and men in the EU25 (No. 29/2006). Luxembourg: The Statistical Office of the European Communities.
- Fan, P.-L., & Marini, M. M. (2000). Influences on gender-role attitudes during the transition to adulthood. *Social Science Research, 29*, 258–283.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Festinger, L. (1958). The motivating effect of cognitive dissonance. In G. Lindzey (Ed.) *Assessment of human motives*. New York: Rinehart & Company, Inc.
- Firestone, J. M., Harris, R. J., & Lambert, L. C. (1999). Gender role ideology and the gender based differences in earnings. *Journal of Family and Economic Issues, 20*, 191–215.
- Fortin, N. M. (2005). Gender role attitudes and the labour-market outcomes of women across OECD countries. *Oxford Review of Economic Policy, 21*, 416–438.
- Hersch, J., & Stratton, L. S. (2002). Housework and wages. *Journal of Human Resources, 37*, 217–229.
- Hofmann, D. A., & Gavin, M. B. (1998). Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management, 24*, 623–641.
- ISSP (2003). ISSP working principles. Retrieved May 14, 2003, from <http://www.issp.org/organisational.htm>.
- Johannesen-Schmidt, M. C., & Eagly, A. H. (2002). Another look at sex differences in preferred mate characteristics: The effects of endorsing the traditional female gender role. *Psychology of Women Quarterly, 26*, 322–328.
- Konrad, A. M. (2003). Family demands and job attribute preferences: A 4-year longitudinal study of women and men. *Sex Roles, 49*, 35–45.
- Konrad, A. M., & Harris, C. (2002). Desirability of the Bem Sex-Role Inventory items for women and men: A comparison between African Americans and European Americans. *Sex Roles, 47*, 259–271.
- Kroska, A. (1997). The division of labor in the home: A review and conceptualization. *Social Psychology Quarterly, 60*, 304–322.
- Loo, R., & Thorpe, K. (1998). Attitudes toward women's roles in society: A replication after 20 years. *Sex Roles, 39*, 903–912.
- Nakata, Y.-F., & Takehiro, R. (2002). Employment and wages of female Japanese workers: Past, present, and future. *Industrial Relations, 41*, 521–547.
- Osborne, J. W. (2000). Advantages of hierarchical linear modeling. Retrieved April 18, 2005, from <http://PAREonline.net/getvn.asp?v=7&n=1>
- Panayotova, E., & Brayfield, A. (1997). National context and gender ideology: Attitudes toward women's employment in Hungary and the United States. *Gender & Society, 11*, 627–655.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks: Sage Publications.
- Shelton, B. A., & John, D. (1996). The division of household labor. *Annual Review of Sociology, 22*, 299–322.
- Solberg, E. J. (2005). The gender pay gap by occupation: A test of the crowding hypothesis. *Contemporary Economic Policy, 23*, 129–148.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics*. Boston: Allyn & Bacon.
- Treas, J., & Widmer, E. D. (2000). Married women's employment over the life course: Attitudes in cross-national perspective. *Social Forces, 78*, 1409–1436.
- U.S. Department of Commerce (2002). *Statistical abstract of the United States*. Washington, DC: U.S. Government Printing Office.
- Wu, Z., & Baer, D. E. (1996). Attitudes toward family and gender roles: A comparison of English and French Canadian women. *Journal of Comparative Family Studies, 27*, 437–452.