MOTHERS, FRIENDS AND GENDER IDENTITY

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ABSTRACT

This paper explores a novel mechanism of gender identity formation. Specifically, we explore how the work behavior of a teenager's own mother, as well as that of her friends' mothers, affect her work decisions in adulthood. The first mechanism is commonly included in economic models. The second, which in social psychology is also emphasized as an important factor in gender identity formation, has so far been overlooked. Accordingly, our key theoretical innovation is how the utility function is modeled. It is assumed that an adult woman's work decisions are influenced by her own mother's choices as well as her friends' mothers' choices when she was a teenager, and the interaction between the two. The empirical salience of this behavioral model is tested using a network model specification together with the longitudinal structure of the AddHealth data set. We find that both intergenerational channels positively affect a woman's work hours in adulthood, but the cross effect is negative, indicating the existence of cultural substitutability. That is, the mother's role model effect is larger the more distant she is (in terms of working hours) from the friends' mothers.

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1 Introduction

An extensive literature in economics focuses on the importance of cultural norms for economic decisions and for the persistence of beliefs, norms, and socio-economic status across generations (Alesina and Giuliano, 2010, 2013; Bisin and Verdier, 2011). When it comes to women, a number of studies have established that gender norms can explain some of the differences in women's labor market outcomes over time, across countries and ethnicities, and across generations (see Alesina et al., 2013, and surveys by Bertrand, 2010, and Fernandez, 2011). Some of these studies are grounded in Akerlof and Kranton (2000, 2010) identity economics framework. In the case of gender identity, the social category is man and woman, and a key (exogenously given) behavioral prescription is "men work in the labor force and women work at home". If deviations from this prescription were costly, then gender identity would lead to lower labor force participation and investments in human capital.

But how are these behavioral prescriptions or social norms acquired? This paper explores, both theoretically and empirically, the importance of early socialization for shaping gender identity and subsequent work choices of a recent cohort of women. In the psychology literature, gender role socialization is thought to occur through three main channels: reinforcement by parents of gender appropriate behavior, children modeling their behavior on same sex parents, and children learning the rules of appropriate behavior from observing adults in a society (e.g., Hyde and Rosenberg, 1980; Williams, 1977). We explore the importance of the last two channels. That is, we assume that gender norms are shaped during women's adolescence by observing the behavior of a specific reference group: *mothers.* This includes both the same-sex parent and friends' mothers, a set of female adults she is likely to have been frequently exposed to.[1] Although social psychology has emphasized both mechanisms as fundamental factors in gender identity formation, work in economics has so far only focused on the first mechanism, thus overlooking the second.

Following Bisin and Verdier (2000, 2001), our behavioral model emphasizes both the direct role played by having a working mother (*direct vertical socialization*) and the role played by the work behavior of the daughter's friends' mothers (*oblique and horizontal socialization*). Relative to the gender identity framework, our contribution is to argue that an adult woman's actions are affected by a pre-determined behavioral prescription formed during adolescence. Relative to theories emphasizing intergenerational mechanisms of transmission of gender norms and beliefs (Fernández, 2013; Fernández et al., 2004; Fogli and Veldkamp, 2011), our contribution is to include both the horizontal and the vertical channel and to allow for individual specific network effects.

We test the empirical salience of this model by using a network model specification together with the unique longitudinal structure of the National Longitudinal Survey of Adolescent Health (Add Health) data set. As is common in the literature, information on work hours is used both

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[1]The importance of the quality and quantity of contact for gender stereotyping has been emphasized both in the social psychology and in the economic literature. See for example, Asgari et al. (2010) and Carrell et al. (2010).

as the outcome of interest and to measure socialization. We measure work outcomes, educational attainment, marital status and presence of children as of 2007-08 (Add Health, wave IV), when women in our sample are 24 to 30 years old. However, their social network and information on mothers' worked hours, education and other background characteristics are from wave I (1995-96), corresponding to age 12 to 18.

As expected, we find that there is a positive relationship between the labor supply of mothers and daughters: the more mothers work, the more they represent a "role model" for their daughters (i.e. the more their daughters work). The horizontal effect of peers' mothers is also positive and significant. Interestingly, we then uncover a negative cross effect, providing evidence of *cultural substitutability* between these two channels. In other words, the more the mother worked, the lower the impact of friends' mothers on own work behavior. The quantitative importance of these effects is stronger in the presence of children. That is, the long lasting effects of others' work behavior is strongest when daughters become mothers themselves, with the mother's role model effect being strongest for college educated women.

Our findings are robust to the inclusion of grade and school fixed effects, to measurement errors in peer groups, as well as to the inclusion of a contemporaneous peer effect variable (current hours worked by women who belonged to the network of friends during adolescence). To further address the potential endogeneity of friendships and thus of friends' mothers' labor market outcomes, we implement an instrumental variable strategy that exploits the high residential mobility after high school in the US. The AddHealth provides informations at the block, tract and county level for many socio-economic variables collected from various government sources. It also contains extremely detailed information on residential moves: we know the distance in kilometers between residential location in wave I and residential location in wave III. We use labor market employment opportunity measures in the residential block during teenage years to instrument friends' mothers' hours worked. If the daughter, after high school, changes residential location, then the labor market characteristics at the block level during her teenage years should influence her working hours in adulthood only through hours worked by school friends' mothers. This analysis further confirms our results.

Our paper is part of a literature that uses a neighborhood approach (here a social network approach) to identify the importance of early socialization for economic outcomes (Katz et al., 2001; Kling et al., 2001; Oreopolous, 2003; Patacchini and Zenou, 2011; Solon et al., 2000). The key theoretical innovation relative to this literature has to do with the way the utility function is modeled. It is assumed that an adult woman's work decisions are influenced by her own mother's choices as well as, and this is the new part, her friends' mothers work behavior when she was a teenager. In addition, we introduce a cross term to capture how the social norm of the mother and of the friends' mothers affects the daughter's own choice. The innovation in the empirical analysis is threefold. First, this unique data set allows for individual-specific peer groups. Second, the target variable is the behavior of the mothers of peers in adolescence rather than peers behavior in

adulthood. Third, the geographical detail of our data allows us to implement a novel identification strategy. Although there is a large and growing literature on social interactions in economics (Jackson, 2008; Ioannides, 2012) and the Add Health data have been used extensively to study peer effects, this paper is the first, to our knowledge, to use the (lagged) information on friendships to investigate the role of early socialization for the formation of gender norms.[2]

In the context of testing theories of gender identity, the closest paper is Bertrand et al. (2013), which explores the behavioral prescription "a man should earn more than his wife". The authors establish that gender identity, interpreted as a wife's higher aversion towards earning more than her husband, is an important determinant of marriage formation and satisfaction, as well as a married woman's labor force participation and income conditional on working. By focusing on another typical gender behavioral prescription, our paper complements their work.

Finally, our paper is also related to a growing literature documenting the importance of gender norms for female outcomes. Farré and Vella (2013) find a strong association between a mother's attitudes towards gender roles and work experience and daughter's (and daughter-in-law's) labor force participation decision. Fernández (2007) and Fernández and Fogli (2006, 2009) identify the effect of cultural differences on women's work and fertility choices by using the lagged values of this variable in a woman's country of ancestry and a cross-section of second-generation immigrants. Fortin (2005) shows the existence of a negative correlation between conservativeness of gender roles attitudes and female labor force participation. Alesina et al. (2013) uncover the empirical relationship between the use of plough agriculture and gender role attitudes using its variation across ethnic groups to identify the effect of cultural differences on women's participation in the labor force and in the political arena.

Our findings can shed light on one possible mechanism that might have contributed to the so-called "opt-out revolution" in which women in their early twenties and early thirties are said to be inclined to withdraw from the labor market.[3] Goldin (2006) documents that, for the cohort of women born around 1959, there is little evidence of a counter-revolution to the one that transformed women's economic role and that, as she argues, was associated with increasing women's attachment to the workplace and greater identity with a career. Fortin (2009) shows that, since the mid-1990s, newer cohorts of women have developed more conservative gender role attitudes than their predecessors, the so-called "backlash" effect.[4] She argues that the halted progress in women's labor

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[2]Fryer and Torelli (2010) use the information on the friendship network in AddHealth wave I data to investigate the economics of "acting white".

[3]In 2003, the New York Times published a lengthy article by Lisa Belkin about women who were choosing to leave the workforce to be stay-at-home moms: the so-called "Opt-Out Generation". Some of the conclusions of the article seem to have been premature. See Judith Warner's "The Opt-Out Generation Wants Back In" published in the New York Times in August 2013.

[4]Unlike other papers in this literature, Fortin (2009) bases her analysis on the Benabou and Tirole (2011) framework where "identity" is modeled as a portfolio investment decision. Specifically, a woman can choose to invest in labor market skill ("career woman" identity) or marriage skills ("housewife" identity) but the two identities are at

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market outcomes might partially be attributed to non-economic factors.[5] The young women in our analysis, born between 1978 and 1983, are in their late twenties or early thirties in 2007-08. That is, they belong to cohorts of women whose behavior has been under scrutiny. We do not find evidence in support of an intergenerational backlash effect. On the contrary, our results indicate that mothers' work had a positive influence on daughters' gender role attitudes and work choices.

The paper is organized as follows. Section 2 presents the model. Section 3 describes the data. Section 4 discusses our empirical strategy while Section 5 presents the main results of the analysis. Section 6 reports the results of several robustness checks. Section 7 further investigates the mechanisms underlying our findings. Finally, Section 8 concludes.

2   Theoretical model

Consider a woman i who is adult at time $t+1$ and who was a daughter and a student at time t and belonged to network r. We model her choice of effort level in terms of working hours (a continuous variable), which we denote by $h_{i,r,t+1}$. We assume that the choice of $h_{i,r,t+1}$ made at time $t+1$ is influenced by how many hours her own mother worked at time t $(h_{i,r,t}^m)$ when she was a student. In addition, and this is the new part, it is influenced by the average number of hours her friends' mothers worked at time t $(\overline{h}_{j,r,t}^m)$. The social environment is modeled by using the daughter's network r of friendships at time t.

The network   Suppose a finite set of students $N = \{1, \ldots, n\}$ is partitioned into $\overline{r}$ networks, where $N_r = \{1, \ldots, n_r\}$ denotes the set of students in the rth network $(r = 1, ..., \overline{r})$. We keep track of social connections in network r by its *adjacency matrix* $G_r = [g_{ij,r}]$, where $g_{ij,r} = 1$ if i and j are friends, and $g_{ij,r} = 0$, otherwise.[6] We also set $g_{ii,r} = 0$. The *reference group* of student i in network r is the set of i's friends given by $N_{i,r} = \{j \neq i \mid g_{ij,r} = 1\}$. The size of $N_{i,r}$ is $g_{i,r} = \sum_{j=1}^{n_r} g_{ij,r} = |N_{i,r}|$, which is known as the *degree* of i.

Preferences   Each adult woman i selects work effort $h_{i,r,t+1}$, and obtains a payoff that is defined as follows:

$$u_{i,r,t+1}\left(h_{i,r,t+1}, \overline{h}_{j,t}^m, G_r\right) = a_{i,r,t,t+1}h_{i,r,t+1} - \frac{1}{2}h_{i,r,t+1}^2 - \frac{d_1}{2}\left(h_{i,r,t+1} - h_{i,r,t}^m\right)^2 \tag{1}$$

$$-\frac{d_2}{2}(h_{i,r,t+1} - \overline{h}_{j,r,t}^m)^2 + \alpha_2 h_{i,r,t+1}h_{i,r,t}^m\overline{h}_{j,t}^m$$

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odds with each other thus potentially generating cognitive dissonance.

[5]On the other hand, taking an international perspective, Blau and Kahn (2013) show that one important factor underlying this development is the absence of "family-friendly" policies in the United States.

[6]We assume friendships are reciprocal so that $g_{ij,r} = g_{ji,r}$. All our results hold for asymmetric (*directed*) networks but, for ease of presentation, we focus on symmetric (*undirected*) networks.

The first term in the utility function (1) represents the benefit individual i receives from working $h_{i,r,t+1}$ hours at time $t+1$, where

$$a_{i,r,t,t+1} = \sum_{k=1}^{K} \alpha_1^k x_{i,r,t,t+1}^k$$

are the observable characteristics (e.g. race, gender, etc.) of individual i both at time t and at time $t+1$. The second term captures the effort cost of providing these working hours. The next two terms in (1) reflect the influence on individual i's behavior at time $t+1$ of, respectively, her own mother and her friends' mothers work behavior experienced during adolescence, where

$$\overline{h}_{j,r,t}^m = \frac{1}{g_{i,r,t}} \sum_j g_{ij,r,t} h_{j,r,t}^m \tag{2}$$

is the average number of hours her school friends' mothers worked at time t. The parameters $d_1, d_2 > 0$ measure the taste for conformity. We assume the parameters $\alpha_1^k > 0$ for all $k = 1,...,K$, but allow α_2 to be positive or negative. The last two terms of the utility function are such that an individual i wants to minimize the *social distance* both between herself and her mother, i.e. $h_{i,r,t+1} - h_{i,r,t}^m$, and between herself and her reference group, i.e. $h_{i,r,t+1} - \overline{h}_{j,r,t}^m$. This preference specification is standard in economic models of conformity (see, among others, Akerlof, 1980, 1997; Bernheim, 1994; Kandel and Lazear, 1992; Fershtman and Weiss, 1998; Patacchini and Zenou, 2012). In our context, the taste for conformity operates through two different channels. A woman i loses utility $\frac{d_1}{2}(h_{i,r,t+1} - h_{i,r,t}^m)^2$ from failing to conform to the social norm imposed by her own mother but she also loses utility $\frac{d_2}{2}(h_{i,r,t+1} - \overline{h}_{j,r,t}^m)^2$ from failing to conform to the social norm imposed by her friends' mothers. In addition, the cross term in utility function (1), $\alpha_2 h_{i,r,t+1} h_{i,r,t}^m \overline{h}_{j,t}^m$, indicates how the social norm of i's mother and of the mothers of her friends marginally affects the daughter's choice. Note that this term can be positive or negative depending on the sign of α_2. To observe the crucial role of α_2, observe that

$$\frac{\partial^2 u_{i,r,t+1}}{\partial h_{i,r,t+1} \overline{h}_{j,t}^m} = d_2 + \alpha_2 h_{i,r,t}^m \text{ and } \frac{\partial^2 u_{i,r,t+1}}{\partial h_{i,r,t+1} h_{j,t}^m} = d_1 + \alpha_2 \overline{h}_{j,t}^m$$

As a result, if $\alpha_2 > 0$, then both the effect of my mother's working hours and of my friends' mothers' working hours on my marginal utility of working is positive. If $\alpha_2 < 0$, then these two effects become ambiguous.

Optimal choice of working hours We now characterize the equilibrium where each daughter i chooses her working hours $h_{i,r,t+1} \geq 0$ to maximize her utility (1). It follows from the first-order condition that:

$$h_{i,r,t+1} = \gamma h_{i,r,t}^m + \phi \overline{h}_{j,r,t}^m + \theta h_{i,r,t}^m \overline{h}_{j,t}^m + \sum_{k=1}^{K} \beta^k x_{i,r,t,t+1}^k \tag{3}$$

where $\gamma = d_1/(1 + d_1 + d_2)$, $\phi = d_2/(1 + d_1 + d_2)$, $\theta = \alpha_2/(1 + d_1 + d_2)$, $\beta^k = \alpha_1^k/(1 + d_1 + d_2)$, for all $k = 1, ..., K$. Note that θ can be positive or negative depending on the sign of α_2. It is easily verified that

$$\frac{\partial^2 h_{i,r,t+1}}{\partial h_{i,r,t}^m \partial \overline{h}_{j,t}^m} = \theta \tag{4}$$

If $\theta > 0$, then a higher average working hours of the friends' mothers increases the impact of the mother's working hours on her daughter's working hours, and vice versa. In other words, a positive value of θ indicates *cultural complementarity* between the vertical and horizontal channel, while a negative θ implies *cultural substitutability*. Moreover, an increase in a mother's working hours has the following impact on her daughter's working hours:

$$\frac{\partial h_{i,r,t+1}}{\partial h_{i,r,t}^m} = \gamma + \theta \overline{h}_{j,t}^m$$

Thus, this effect depends on the sign of θ and on the strength of the peer effects, $\overline{h}_{j,t}^m$. Similarly,

$$\frac{\partial h_{i,r,t+1}}{\partial \overline{h}_{j,t}^m} = \phi + \theta h_{i,r,t}^m$$

so that an increase in the working hours of friends' mothers ($\overline{h}_{j,t}^m$) can increase or decrease own working hours, depending on the sign of θ and on the intensity of the mother's working hours $h_{i,r,t}^m$.

Using (2), equation (3) is equivalent to:

$$h_{i,r,t+1} = \gamma h_{i,r,t}^m + \phi \frac{1}{g_{i,r,t}} \sum_j g_{ij,r,t} h_{j,r,t}^m + \theta h_{i,r,t}^m \left(\frac{1}{g_{i,r,t}} \sum_j g_{ij,r,t} h_{j,r,t}^m \right) + \sum_{k=1}^{K} \beta^k x_{i,r,t,t+1}^k \tag{5}$$

Since the utility function (1) is strictly quasi-concave, there exists a unique solution determined by (5).

3 Data description

Our empirical analysis is based on data from the National Longitudinal Survey of Adolescent Health (AddHealth). Four features of the AddHealth data set are central to our analysis: *(i)* the nomination-based friendship information, which allows us to reconstruct the precise geometry of social contacts, *(ii)* the longitudinal dimension, which provides respondents' information during both teenage and adulthood, *(iii)* the geo-coded information on residential locations, which allows us to implement an identification strategy based on residential mobility.

The AddHealth has been designed to study the impact of the social environment (i.e. friends, family, neighborhood and school) on adolescents' behavior in the United States by collecting data on students in grades 7-12 from a nationally representative sample of roughly 130 private and

public schools in years 1994-95 (wave I). Every pupil attending the sampled schools on the interview day is asked to compile a questionnaire (*in-school data*) containing questions on respondents' demographic and behavioral characteristics, education, family background and friendship. This sample contains information on roughly 90,000 students. A subset of adolescents selected from the rosters of the sampled schools, about 20,000 individuals, is then asked to compile a longer questionnaire containing more sensitive individual and household information (*in-home* and *parental data*). These students are interviewed again in 1995-96 (wave II), in 2001-2 (wave III), and again in 2007-2008 (wave IV). One of the most interesting aspects of the Add Health data is the information on friendship networks, which is based upon actual friends nominations during the school years. Indeed, pupils were asked to identify their best friends from a school roster (up to five males and five females).[7] As a result, one can reconstruct the whole geometric structure of the friendship networks. Such detailed information on social interaction patterns allows us to measure the relevant local community, i.e. the students who actually interact closely with each other, much more precisely than in previous studies. We consider that a link exists between two friends if at least one of the two individuals has identified the other as his/her best friend. For each school, we thus keep track of all the individuals who actually interact with a given student. By matching the identification numbers of the friendship nominations to the respondents' identification numbers, one can also obtain information on the characteristics of nominated friends. This information is key in our analysis as it allows us to trace back the labor market outcomes, the education etc. of each student's friends' parents. The longitudinal structure of the survey provides information on the characteristics, in adulthood, of the respondent and of his/her high school friends, including their employment outcomes.

In particular, wave IV asks detailed information about the current/most recent job that involves at least ten hours per week, including total number of hours worked in a typical week and the month and year the job started (and ended). At wave IV, students are 24 to 30 years old. Virtually all of them are either currently employed or have had a job in the last three years.[8] As a result, we extract information on hours worked in the current/most recent job and we focus our analysis on the intensive margin.

While the information on work outcomes, educational attainment, marital status and presence of children comes from wave IV, we construct the social networks on the basis of information on friendship choices during high school. This information was collected in wave I of the survey (1995-96) when the women in our sample where in grades 7 to 12. We note that, while most of the empirical analysis is restricted to women, the friendship network includes both boys and girls. The information on school performance, parental labor market outcomes and education, and other background characteristics also comes from wave I.

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[7]The limit in the number of nominations is not binding (even by gender). Less than 0.1% of the students in our sample show a list of ten best friends.

[8]Less than 1% have never been employed.

Our final sample of in-home wave I students (and their friends) that are followed over time and with non-missing information on our target variables both in wave I and in wave IV consists of 5,683 women distributed over 374 networks. The minimum number of individuals in a network is 2 while its maximum is 225. The mean and the standard deviation of network size are roughly 5.5 and 13 individuals, respectively. On average, the students declare having about 2 friends (with a standard deviation of roughly 1.5). We measure the mother's influence and the influence of the friends' mothers (i.e. of the local environment) during the teenage years using information on weekly hours worked from wave I. The work decision in adulthood is measured using the individual data on weekly hours worked from wave IV.

Table 1 provides some descriptive statistics on the individuals in our study. Female students make up 50% of our sample, of which 60% are white. More than 70% of women in our sample come from a two-parent household, with an average household size of around 4. Moreover, 56% of all mothers have a high school diploma, 30% have a college degree or higher graduate degrees. Mothers worked on average about 38 hours a week in wave I. By age 24 to 30 (wave IV), 43% of our wave I adolescents are married and 55% of them have children. Only 5% of all women in our sample are high school drop outs while 38% have a college degree or a higher level of educational attainment and they work on average about 39 hours per week. Roughly 30% of women in our sample were high-performing students in school, i.e. had the highest marks in mathematics.

[Insert Table 1 here]

4 Empirical analysis

The econometric framework closely mirrors our behavioral model. As stated above, let $\bar{r}$ be the total number of networks in the sample, n_r be the number of individuals in the rth network, and $n = \sum_{r=1}^{\bar{r}} n_r$ be the total number of individuals. For $i = 1, \cdots, n_r$ and $r = 1, \cdots, \bar{r}$, the econometric model corresponding to (5) can be written as:

$$h_{i,r,t+1} = \gamma h_{i,r,t}^m + \phi \frac{1}{g_{i,r}} \sum_{j=1}^{n_r} g_{ij,r} h_{j,r,t}^m + \theta h_{i,r,t}^m \left(\frac{1}{g_{i,r,t}} \sum_j g_{ij,r,t} h_{j,r,t}^m \right) + \sum_{k=1}^K \beta^k x_{i,r,t,t+1}^k + \varepsilon_{i,r,t,t+1} \quad (6)$$

where $\varepsilon_{i,r,t,t+1}$'s are i.i.d. innovations with zero mean and variance σ^2 for all i and r.

While most of the existing studies on the impact of the social context on individual outcomes measure the social context at a quite aggregate level (neighborhood, classroom, city),[9] here we adopt a *social network* approach. Such an approach allows us to measure the influence of social context more precisely than in previous studies, as the peers are defined by the smallest unit of analysis, the dyad (i.e. a two-person group). However, when assessing the impact of the behavior

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[9]See e.g., Katz et al. (2001), Kling et al. (2001), Oreopolous (2003), Patacchini and Zenou (2011), Solon et al. (2000). For an overview of this literature, see Durlauf (2004), Ioannides and Topa (2010) and Ioannides (2011).

of a (narrowly and well-defined) reference group on individual decisions the identification of the effect is complicated by the possible endogenous formation of the group.

Observe first that we do not have a standard peer-effect model where the action of a person is affected by the average actions of his/her peers (see, e.g. Sacerdote, 2001, 2011; Clark and Loheac, 2007; Calvó-Armengol et al., 2009; De Giorgi et al., 2010; Lin, 2010; Bifulco et al., 2011). In (6), the action (working hours) of a woman is not directly affected by the actions (working hours) of her peers (school friends), but by the actions (working hours) of the mother of her friends. However, friends do select into groups (or networks) in a non-random way and thus the friends' mothers can also be selected. The perspective of our approach mitigates such an issue because the social network structure is predetermined in adulthood. However, there might still remain some troubling unobserved factor constant over time. We will further address this potential concern in Section 6 below.

5 Results

Table 2 reports the OLS estimation results of model (6). Our main results are unchanged as we increase the set of controls (moving to the right of the table). Specifically, column (3) includes daughters' demographic characteristics, race, marital status, presence of children, as well as their average GPA and their grades in wave I. It also includes controls for background variables such as: (own) mother's immigration status and education (two dummies, the omitted category is "less than high school"), family income and an indicator of residential building quality.[10] In column (4) we add daughter's completed education (again two dummies) and two additional background variables that might potentially be driving daughters' attitude towards gender roles. The first variable is a measure of religiosity during adulthood[11] while the second measures the quality of mother-daughter interactions during adolescence.[12]

[*Insert Table 2 here*]

In all specifications, we find that there is a *positive* relationship both between daughter's hours

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[10]Interviewer response to the question: "How well kept is the building in which the respondent lives", coded as 4= very poorly kept (needs major repairs), 3= poorly kept (needs minor repairs), 2= fairly well kept (needs cosmetic work), 1= very well kept.

[11]Response to the question: "How often have you attended religious services in the past 12 months?", coded as 0= never, 1= a few times , 2= several times, 3= once a month, 4=2 or 3 times a month, 5=once a week, 6=more than once a week.

[12]Our index of quality of mother-daughter interactions is obtained by factor analysis using two AddHealth variables (from wave I). The first variable records the answer to the question "How much do you think she (mother) cares about you?". The answers were recorded on a 1 to 5 scale, with 1 = not at all and 5 = very much. For the second variable, the respondent had to indicate her level of approval to the following statement: "When you do something wrong that is important, your mother talks about it with you and helps you understand why it is wrong." The answers were recorded on a 1 to 5 scale, with 1 = strongly agree and 5 = strongly disagree.

and mother's hours (the *vertical* channel) and between daughter's hours and friends' mothers' hours (the *horizontal* channel). In the basic specification (column (1) to (4)), we find a negative and significant cross effect, which implies that $\theta < 0$ (see (4)). In other words, we find evidence of *cultural substitutability* between the vertical and the horizontal channel of working hours transmission. Furthermore, the estimates for the control variables follow the pattern of sign and significance that is common in the literature on female labor supply. For instance, women work significantly fewer hours if they have children (see columns (3) and (4)) and college graduates work significantly more hours than women with less than a high school diploma.

We interpret our results based on the entries in column (3). Our estimates imply that an increase in a mother's working hours $(h_{i,r,t}^m)$ increases her daughter's working hours by $\widehat{\gamma} = 0.1513$. The marginal effect is given by:[13]

$$\frac{\partial h_{i,r,t+1}}{\partial h_{i,r,t}^m} = \widehat{\gamma} + \widehat{\theta}\,\overline{h}_{j,t}^m = 0.1513 - 0.0032\,\overline{h}_{j,t}^m$$

Computed at the mean of $\overline{h}_{j,t}^m = 37.86$ (see Table 1), this is equal to 0.03, corresponding to roughly 8% of average hours worked by daughters in our sample. The marginal effect of the social context is quantitatively very similar to that of a woman's own mother (in fact, the vertical and horizontal channels are indistinguishable from each other). We find that an increase in the working hours of friends' mothers $(\overline{h}_{j,t}^m)$ increases the daughter's working hours by $\widehat{\phi} = 0.1433$. The implied marginal effect in this case is given by:

$$\frac{\partial h_{i,r,t+1}}{\partial \overline{h}_{j,t}^m} = \widehat{\phi} + \widehat{\theta}\,h_{i,r,t}^m = 0.143 - 0.0032\,h_{i,r,t}^m$$

which, given an average of 37.2 weekly hours (see Table 1), is equal to 0.022, corresponding to approximately 6% of average hours worked by daughters.

These results indicate that the mother's "role model" effect is larger the more distant (in term of working hours) she is from her daughter's friends' mothers. In other words, if friends' mothers are more similar to my own mother, the role model effect is weaker.

We also study whether the quantitative importance of these effects differs by presence of children. Almost all young women in the Add Health cohort work before having children. Thus we do not expect to find as strong a statistical relationship between the working hours of women without children and those of "mothers" (either through the vertical or the horizontal channel). However, assuming that the work-family balance observed during adolescence shapes gender identity, the long lasting effects of mothers' work behavior should emerge when the daughters themselves face the family-work trade-off and makes decisions. As shown in Table 3, this expectation is confirmed in the data. Interestingly, in this case, the own mother effect dominates that of the friends' mothers

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[13]A hat above a variable indicates that the variable is estimated. So, for example, $\widehat{\gamma} = 0.513$ is the estimated value of γ as reported in Table 2 column (3).

(explaining 11.7% against 4.7% of average hours worked by daughters). The relative importance of the vertical and horizontal channel greatly differs by education. While for young women with children of their own and less than a college degree, the results looks fairly similar to those reported in Table 2 column (3), the own mother effect dominates for the sub-sample of women with children and at least a college degree (10.6% relative to -0.02%).

[*Insert Table 3 here*]

We worry that our results might be capturing the influence of (omitted) background factors that determine adult labor market outcomes independent of gender. This concern would be mitigated if we find no significant impact of mothers' work hours on the sample of men. Thus, in Table 4, we report the regression results for the adult male sample. This "placebo" test provides additional support in favor of our hypothesis and empirical strategy. Comparing the entries in Table 4 to column (1) to (3) in Table 2, it is clear that, unlike daughters, sons' work hours in adulthood are *unaffected* by mothers' working behavior during adolescence.

[*Insert Table 4 here*]

6 Robustness checks

To gain more confidence in our identification strategy, we consider a series of robustness checks whose results are reported in Table 5.

[*Insert Table 5 here*]

6.1 Grade and school fixed effects

Our first robustness check is to estimate model (6) using OLS with *grade* and *school fixed effects*. The idea is to treat the composition of students in a given grade within a school as quasi-random and to exploit variation in student composition across cohorts within schools to isolate this quasi-random variation in the friendship network formation process. Similar assumptions about cohort variation are frequently made in the literature, see e.g. Angrist and Lang (2004), Bifulco et al. (2011), Gould et al. (2004), Hanushek et al. (2002), Hoxby (2000), Lavy and Schlosser (2011) and Black et al. (2013). The effect of peers are identified under the assumption that parents and their children do not sort across schools based on differences between the demographic composition of the child's cohort and the average composition of the school.

The outcome of this exercise, reported in the first column of Table 5, clearly shows that the main results remain unchanged.[14]

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[14]In an alternative robustness check we exploit the network structure and include *network fixed effects*. The estimated coefficients are more noisy in this specification but the results of the analysis are unchanged.

6.2 IV estimates

The potential issue we face is the possible *endogeneity* of friendships and thus friends' mothers' labor market outcomes. Indeed, networks could be formed because of spatial contiguity: people who live in the same neighborhood are more likely to be in the same social network; they are also facing the same environment, especially in terms of labor market opportunities (see e.g. Ihlanfeldt, 2006; Gobillon et al., 2007; Bayer et al., 2008; Hellerstein et al., 2011; Zenou, 2013).

In order to address this concern, we use an instrumental variable strategy that exploits one interesting feature of the data. Namely, the AddHealth contains longitude and latitude coordinates of the residential location of each respondent in wave I. Thus we compute an *indicator of female working hours at the block level during teenage years* to instrument for friends' mothers' hours worked. This instrument can be justified on the basis of the high geographical mobility of young adults in the US. The idea is that if a daughter changes residential location after she graduates from high school, then the labor market characteristics prevailing in her parents' block should influence her working hours in adulthood only through the hours worked by her school friends' mothers.

The evidence on geographical mobility in the US supports this assumption. For example, based on the 2007-2009 American Community Survey data, Qian (2012) reports that 84% of 25 to 29 year old women (roughly corresponding to our sample of adult women) did not live with their parents. In addition, based on the publicly available Census 2000 data, Qian (2012) documents that by age 20 to 24 (roughly corresponding to our sample of women in wave III), approximately 70% of women had left their parental home.[15] We can also check directly whether this is also true in our sample, albeit imperfectly since wave IV does not contain the relevant information. However, wave III reports information on the distance in kilometers between current residential location and residential location in wave I. This distance ranges from 0 to 8,000 kilometers, with an average of 183 kilometers (geo-coded information). Thus, we can compute the percentage of students who moved away from their childhood home between wave I and wave III. We find that more than 70% of women in our sample (who were 18 to 24 years old in 2001-02) lived more than 1.5 km away from their (wave I) parental home at the time of the interview.[16]

Our instrument is obtained by *averaging the hours worked by the mothers among individuals who reside in the same block as the daughter.* Although the data does not contain the real census block identification for confidentiality reason, it provides a generated code that allows us to identify individuals living in the same block. We consider the entire sample of Addhealth wave I students for which this information is available (both males and females).

Our identification strategy relies not only on time differences between wave I and wave IV (a depressed area may have not improved that much even in 20 years), but also on spatial differences

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[15]Both figures are from Table 1 in the Appendix of Qian (2012).

[16]There is, of course, the possibility, that some of them return to their parental home between wave III and wave IV. On the other end some of these women could leave the parental home between wave III and wave IV.

between the two waves.

The results of this analysis are reported in column (2) in Table 5. The F-test for the first stage shows that this instruments is strong. As can be seen, the estimation results remain unchanged.

6.3   Directed networks

Our theoretical model and, consequently, our empirical investigation assume that friendship relationships are symmetric, i.e. $g_{ij} = g_{ji}$. We examine the sensitivity of our results to this assumption, i.e. to possible measurement error in the definition of the peer group. Indeed, our data make it possible to know exactly who nominates whom in a network and we find that 12% of relationships in our dataset are not reciprocal. Thus, instead of constructing undirected network, we also analyze *directed networks*.

In the language of graph theory, in a directed graph, a link has two distinct ends: a head (the end with an arrow) and a tail. Each end is counted separately. The sum of head endpoints count toward the *indegree* and the sum of tail endpoints count toward the *outdegree*. Formally, we denote a link from i to j as $g_{ij} = 1$ if j has nominated i as his/her friend, and $g_{ij} = 0$, otherwise. The indegree of student i, denoted by g_i^+, is the number of nominations student i receives from other students, that is $g_i^+ = \sum_j g_{ij}$. The outdegree of student i, denoted by g_i^-, is the number of friends student i nominates, that is $g_i^- = \sum_j g_{ji}$. We can thus construct two types of directed networks, one based on indegrees and the other based on outdegrees. Observe that, by definition, while in undirected networks the adjacency matrix $\mathbf{G} = [g_{ij}]$ is *symmetric*, in directed networks it is *asymmetric*.

The results of the estimation of model (6) when the directed nature of the network data is taken into account[17] can be found in Table 5, column (4). Once again our results are unchanged.

6.4   Peer effects

Although our empirical analysis is driven by the theoretical model in Section 2, one empirical concern could be that friends' mothers' behavior simply reflects friends' behavior. If this is true, then instead of testing a gender identity formation mechanism, we find evidence of peer effects. At the very least, we could be overestimating the importance of "peers".

To further explore this point we add a standard peer effect variable to specification (6): hours worked at time $t + 1$ by women who were in a girl's friendship network during high school. We

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[17]We report the results that are obtained using outdegree. The results based on indegrees are not qualitatively different.

14

obtain:

$$
\begin{aligned}
h_{i,r,t+1} &= \gamma h_{i,r,t}^m + \phi \frac{1}{g_{i,r}} \sum_{j=1}^{n_r} g_{ij,r} h_{j,r,t}^m + \theta h_{i,r,t}^m \left(\frac{1}{g_{i,r,t}} \sum_j g_{ij,r,t} h_{j,r,t}^m \right) \\
&\quad + \delta \sum_{j=1}^{n_r} g_{ij,r,t} h_{j,r,t+1} + \sum_{k=1}^{K} \beta^k x_{i,r,t,t+1}^k + \eta_k + \varepsilon_{i,r,t,t+1},
\end{aligned}
\tag{7}
$$

where δ captures the impact of the behavior of her friends at time $t+1$. In this specification, we also include network fixed effects (as captured by η_k), which control for network-level unobserved factors.

The last column of Table 5 ("spatial lag") reports the estimation results. We find no evidence of peer effects. Also, our main results are basically unchanged, but the cross term is estimated less precisely.

7 Preferences vs. human capital production function

There is a concern that our findings can be explained by differences in maternal investment in market-specific human capital rather than by maternal influences on daughter's preferences. A human capital production story would imply that mothers who work more hours also transfer to their daughters a technology that makes them more productive in the labor market. If this were the case, then we should observe that, everything else being equal, a daughter's hourly wages should be increasing in mother's working hours. On the other hand, the "preference" story highlighted in this paper should imply that daughters of mothers who work more hours are more likely to have more egalitarian gender role attitudes.

The literature provides evidence that intergenerational gender role attitudes are positively correlated. For example, based on NLSY data, Farré and Vella (2007) document a strong association between a mother's attitudes towards gender roles and daughter's gender roles attitudes. They also show that this cultural transmission influences female labor market decisions. Using General Social Survey (GSS) data, we find evidence of a general positive correlation between a mother's labor force participation when the daughter was 16 years old and the daughter's gender roles attitudes in adulthood. More interesting from the point of view of this paper, we find that this is also true for the cohort of women born between 1978 and 1984 (that is, the Add Health cohort). For this cohort, we find that 51% of all women whose mother did not work when they were 16 years old agree with the statement: "It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family". However, among women whose mother worked, only 24% agree with the statement. There is a -2.6 difference in average hours worked between women who agree with the statement *vis a vis* those who disagree with the statement. This is a relatively large number, corresponding to 7% of average hours worked by the respondents in the

GSS sample. Interestingly, our estimates for the marginal effects of mother's working hours and of the social context are in the same ballpark.

While this evidence suggests that the preference channel is important, it does not shed light on the relative importance of the human capital vs. the preference mechanism. Fortunately, the Add Health data allows for a more direct examination of the relevance of these two alternative hypotheses. We can use information on hours worked and earnings to obtain an hourly wage rate. Moreover, wave III (in 2001-2002) contains a key variable for this analysis. Individuals (who are 18 to 24 years old at the time of the survey) were asked a question aimed to measure their attitudes towards gender roles. The respondent had to indicate her level of approval to the following statement (standard in the literature): "It is better for anyone involved if the man earns more money and the woman takes care of home and family". The answers were recorded on a 1 to 5 scale, with 1 = strongly agree and 5 = strongly disagree. Based on this information we construct a binary indicator of egalitarian gender role attitudes that is equal to one if the respondent either disagreed or strongly disagreed with the statement and is equal to zero otherwise.

We then regress daughter's hourly wages and the gender role attitude indicator, in turn, on mother work hours and a full set of controls. The results of this exercise are reported in Table 6. As shown in columns (1) and (2), we find that a daughter's propensity to have egalitarian attitudes towards gender roles is higher, the higher is the mother's work hours. The point estimate is positive and significant at the five percent level in the basic specification (column (1)) and it is significant at the one percent level when we include the same set of controls as in column (3) in Table 2. On the other hand, as shown in columns (3) and (4), we find that the daughter's hourly wage is not correlated with mother's work hours. Taken together, these results suggest that our findings are driven by a preference story rather than a human capital production story.

[*Insert Table* 6 *here*]

8   Conclusions

In this paper, we study the quantitative importance of early socialization for shaping women's gender identity and subsequent work choices. We find that both the same-sex parent's working hours and friends' mothers' working hours during adolescence are important determinants of gender roles and labor supply decisions in adulthood. We also find evidence of cross-substitutability between these two intergenerational channels.

This paper uses work hours both as the outcome of interest and to measure socialization. However, though widely used in this literature, weekly work hours are an imperfect indicator of women's choices regarding the career-family trade-off. For instance, as discussed in Goldin (2006), women's changing economic role has been associated with increasing women's attachment to the workplace and greater identity with a career. An interesting avenue of research would be to exploit

information on women's field of study to examine the impact of early socialization on women's career choices. We leave this for future research.

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Table 1: Summary Statistics, Female Sample

	Average	s.d.	N. obs.
Weekly hours worked	38.87	10.07	5683
Mother work hours	37.72	11.52	5683
Average hrs wkd by friends' mothers	37.86	6.93	5683
Share white	0.60	0.49	5683
Share married	0.43	0.49	5683
Share with children	0.55	0.50	5683
Share with less than High School	0.05	0.21	5683
Share with High School	0.57	0.50	5683
Share with College+	0.38	0.49	5683
Share (%) in grade:			
7	14.04	34.74	5733
8	13.83	34.53	5733
9	18.16	38.55	5733
10	19.15	39.35	5733
11	18.66	38.97	5733
12	16.15	36.54	5733
Average GPA	2.09	0.74	5720
Mothers' share with:			
Less than High School	13.75	34.44	5679
High School	55.91	49.65	5679
College+	30.45	46.02	5679

Notes: Sample includes female students with non-missing information on mother's work hours (Wave I) and hours worked (Wave IV).

Source: National Longitudinal Survey of Adolescent Health (AddHealth).

Table 2: Main Results

	Dependent variable: Weekly hours worked			
	(1)	(2)	(3)	(4)
(1) Mother's hrswork	0.0273**	0.1292**	0.1513**	0.1354**
	(0.012)	(0.058)	(0.064)	(0.064)
(2) Avg hrswork by friends' mothers		0.1278**	0.1433**	0.1267*
		(0.058)	(0.066)	(0.065)
(1)x(2)		-0.0028*	-0.0032*	-0.0028*
		(0.001)	(0.002)	(0.002)
White			-0.2285	-0.2215
			(0.329)	(0.336)
Mother high school			0.4859	0.3134
			(0.457)	(0.459)
Mother college+			0.4333	-0.0538
			(0.513)	(0.521)
Average gpa			-0.9200***	-0.5062**
			(0.214)	(0.229)
Family income			0.0118**	0.0106**
			(0.005)	(0.005)
Family income missing			0.7490	0.6278
			(0.546)	(0.540)
Neighborhood quality			0.0986	0.2074
			(0.202)	(0.201)
Married			-0.4555	-0.6704**
			(0.328)	(0.336)
Mother born US			-0.6493	-0.6009
			(0.462)	(0.460)
Children			-2.7267***	-2.1574***
			(0.319)	(0.335)
High school				-0.3615
				(0.815)
College+				1.6296*
				(0.888)
Religion practice				-0.0549
				(0.097)
Mother care				1.3242***
				(0.498)
Constant	37.8404***	33.1510***	35.8152***	33.7847***
	(0.482)	(2.208)	(2.605)	(2.721)
Grade dummies	no	no	yes	yes
Observations	5,863	5,863	4,647	4,645
R-squared	0.001	0.002	0.038	0.046

Notes: Sample and sources are defined in the notes to Table 1. The table reports OLS estimated coefficients. Robust standard errors in parentheses. The omitted category for education (own and mother's) is less than high school. "Neighborhood quality", "Religion practice" and "Mother care" are defined in footnotes 9, 10 and 11 on page 10.
Significance levels are: * 10%, ** 5%, *** 1%.

Table 3: Marginal effects on daughters' work hours by presence of children and education

	(1)	(2)	(3)	(4)
	Panel A			
	All	**Mothers**		
		All education	College+	Less than College
(1) Mother's hrswork	0.1292**	0.2188***	0.4049**	0.1563**
	(0.058)	(0.079)	(0.206)	(0.080)
(2) Avg hrswork	0.1278**	0.1913**	0.2779	0.1584*
by friends' mothers	(0.058)	(0.080)	(0.197)	(0.085)
(1)x(2)	-0.0028*	-0.0046**	-0.0079	-0.0034*
	(0.001)	(0.002)	(0.005)	(0.002)
Constant	33.1510***	28.6722***	24.2689***	30.2115***
	(2.208)	(3.091)	(7.598)	(3.276)
Observations	5,863	3,200	763	2,437
R-squared	0.002	0.004	0.019	0.002
	Panel B			
	Marginal Effects			
Own Mother	0.023	0.053	0.106	0.028
Friends' Mothers	0.022	0.037	-0.02	0.03
	Percentage Explained			
Own Mother	6.10%	11.70%	10.60%	2.80%
Friends' Mothers	5.80%	4.70%	-0.02%	3.00%

Notes: Sources are defined in the notes to Table 1. Panel A reports OLS estimated coefficients. Robust standard errors in parentheses. In Panel B, marginal effects are computed based on equation (4). Percentage explained is computed as marginal effect divided by average hours worked. Significance levels are: * 10%, ** 5%, *** 1%.

Table 4: Placebo Test, Males

	(1)	(2)	(3)
	Dependent variable: Weekly hours worked		
(1) Mother's hrswork	0.0203	-0.0026	-0.0121
	(0.014)	(0.071)	(0.082)
(2) Avg hrswork by friends' mothers		-0.0323	-0.0360
		(0.073)	(0.083)
(1)x(2)		0.0006	0.0010
		(0.002)	(0.002)
White			1.5397***
			(0.389)
Mother high school			-1.1218*
			(0.617)
Mother college+			-1.6983**
			(0.663)
Average gpa			-0.3776
			(0.238)
Family income			0.0049
			(0.004)
Family income missing			-0.0783
			(0.665)
Neighborhood quality			-0.1665
			(0.240)
Married			1.6027***
			(0.448)
Mother born US			0.2715
			(0.536)
Children			0.7913*
			(0.452)
Religion practice			0.1900
			(0.116)
Constant	43.1418***	44.3155***	44.6256***
	(0.544)	(2.752)	(3.319)
Grade dummies	no	no	yes
Observations	5,172	5,172	4,156
R-squared	0.000	0.000	0.021

Notes: Sample and sources are defined in the notes to Table 1. However, in this table the sample is restricted to male students. The table reports OLS estimated coefficients. Robust standard errors in parentheses. The omitted category for mother's education is less than high school. "Neighborhood quality" and "religion practice" are defined in footnotes 9 and 10 on page 10. Significance levels are: * 10%, ** 5%, *** 1%.

Table 5: Robustness Analysis

	(1)	(2)	3)	(4)
	School/Grade Fixed Effects	IV	Directed G	Spatial lag
(1) Mother's hrswork	0.1430**	0.185*	0.1546**	0.142*
	(0.067)	(0.101)	(0.064)	(-0.095)
(2) Avg hrswork by friends' mothers	0.1273*	0.180*	0.1533**	0.156*
	(0.070)	(0.105)	(0.066)	(-0.1)
(1)x(2)	-0.0029*	-0.0042	-0.0034**	-0.003
	(0.002)	(0.0026)	(0.002)	(-0.002)
Avg hrswork by friends'				-0.025
				(-0.182)
White	-0.0908	-0.231	-0.2252	-0.115
	(0.427)	(0.335)	(0.325)	(0.491)
Mother high school	0.8934**	0.490	0.4779	0.291
	(0.437)	(0.478)	(0.479)	(0.547)
Mother college+	0.6551	0.436	0.4160	0.314
	(0.504)	(0.528)	(0.529)	(0.627)
Average gpa	-1.1119***	-0.925***	-0.9222***	-0.865
	(0.255)	(0.213)	(0.212)	(0.282)
Family income	0.0097*	0.0117***	0.0121***	0.009
	(0.005)	(0.00314)	(0.003)	(0.004)
Family income missing	0.8009	0.748	0.7520	0.118
	(0.615)	(0.527)	(0.528)	(0.610)
Neighborhood quality	0.2239	0.0969	0.1011	0.159
	(0.215)	(0.196)	(0.197)	(0.247)
Married	-0.2175	-0.451	-0.4601	-0.519
	(0.354)	(0.329)	(0.326)	(0.414)
Mother born US	-0.6986	-0.648	-0.6572	0.093
	(0.557)	(0.464)	(0.464)	(0.648)
Children	-2.9486***	-2.726***	-2.7275***	-3.093
	(0.356)	(0.327)	(0.326)	(0.409)
Religion practice		-0.0108		0.04
		(0.0944)		(0.119)
Constant	35.9936***	34.46***	35.4771***	
	(2.850)	(4.023)	(2.625)	
Grade fixed effects	yes	yes	yes	yes
School fixed effects	yes	no	yes	no
Network fixed effects	no	no	no	yes
Observations	4,647	4,552	4,647	3,551
R-squared	0.036	0.037	0.038	

Notes: Sample and sources are defined in the notes to Table 1. Column (1) reports the results of an OLS regression with grade and school fixed effects. In column (2) friends' mothers' hours are instrumented using the average hours worked by females in the residential block during teenage years. The interaction term is instrumented using the interaction between mother's hours worked and our instrument. Angrist-Pischke multivariate F test=291.52. Column (3) reports the results of a directed network specification. Column (4) reports the estimation results of a spatial autoregressive model (equation (6)) where the peer effect variable is hours worked by women who were friends during high school. We report 2SLS estimates (Lee, 2003, 2007). Robust standard errors in parentheses. The omitted category for mother's education is less than high school. "Neighborhood quality" and "religion practice" are defined in footnotes 9 and 10 on page 10. Significance levels are: * 10%, ** 5%, *** 1%.

Table 6: Preferences vs. Human Capital

	Index of egalitarian gender role attitudes		Hourly wages	
Dependent variable is:				
	(1)	(2)	(3)	(4)
Mother's hrswork	0.0021**	0.0024*	-0.0348	-0.0325
	(0.001)	(0.001)	(0.030)	(0.037)
White		0.0183		-1.1531*
		(0.031)		(0.638)
Mother high school		0.1542***		1.5521**
		(0.045)		(0.619)
Mother college+		0.1419***		2.4798***
		(0.050)		(0.623)
Average gpa		-0.0576***		-1.7105***
		(0.020)		(0.289)
Family income		0.0002		0.0046
		(0.000)		(0.006)
Family income missing		0.0189		-0.3021
		(0.049)		(0.726)
Neighborhood quality		-0.0032		-1.3217***
		(0.018)		(0.357)
Married		0.0124		1.4084***
		(0.030)		(0.543)
Mother born US		-0.0154		-1.8610***
		(0.044)		(0.650)
Children		-0.0991***		-3.4418***
		(0.030)		(0.617)
Constant	0.5489***	0.6523***	17.4211***	28.7540***
	(0.042)	(0.097)	(1.293)	(2.306)
Grade dummies	no	yes	no	yes
Observations	1,726	1,226	5,594	4,438
R-squared	0.002	0.046	0.000	0.035

Notes: Sample and sources are defined in the notes to Table 1. The table reports OLS estimated coefficients. Robust standard errors in parentheses. The omitted category for mother's education is less than high school. "Neighborhood quality" is defined in footnote 9 on page 10. Significance levels are: * 10%, ** 5%, *** 1%.