**Informal Childcare Provision and Maternal Wage Outcomes Across the United States**

*Abstract: While it is now commonly accepted that there exists a ‘motherhood penalty’ or a ‘maternal wage gap’, the degree to which changes in provision of public and private childcare could relate to heterogeneities in the degree of this gap still remains to be explored. This paper looks at topics around public childcare subsidy and usage across the United States, and explores whether higher levels of informal childcare would in turn lead to lower levels of differential wage outcomes for working mothers.*

*Key Terms: Motherhood Penalty, Maternal Wage Gap, Public Policy, Childcare, Working Mothers*

# I. INTRODUCTION

Within the literature around the gender wage gap, researchers worldwide have noted the existence of a “motherhood penalty,” a “maternal wage gap,” or a “family wage gap,” a phenomenon in which wage-earning mothers begin to experience proportionally larger wage disparities over time comparatively to women without children (Budig and England 2001). In a meta-analysis of 49 papers, all but 3 (all in Nordic countries) found the existence of a negative wage impact corresponding to motherhood across a variety of regional, economic, individual and social contexts (De Linde Leonard and Stanley, 2020). On average, the magnitude of the wage impact of maternity was reported broadly to be between 5 and 10 percent per child (Gough and Noonan, 2013).

When diving deeper into the underlying causes for the motherhood penalty, a great deal of discussion has been generated around the disproportionate burden placed on mothers to be the primary caregiver in households around the world. These childcare and household burdens are theorized to impact income-generating women by leading to real and perceived disruptions to their careers, as (1) women have been theorized to disrupt their career path by devoting less time or seeking less demanding professional work upon becoming pregnant (Gough and Noonan 2013; Anderson et al., 2003), and (2) employers and coworkers may be more likely to view working mothers as less committed to their jobs, leading to potentially disparate outcomes in terms of wages, hiring decisions, and benefits (Budig and England 2001, Correll et al. 2007).

Accordingly, there has been a great deal of interest in the impact of *the availability of (financially and locationally) accessible* *childcare* and maternal workplace outcomes. Accessible childcare options could impact maternal workplace outcomes by reducing the time and energy burden of childcare placed on working mothers overall and potentially reducing the number of women leaving the workforce or seeking lower-paying work subsequent to having children. Current discourse around this topic has focused on formal (e.g., state-subsidized) and informal (e.g., extended-family or community-provided) childcare availability in Europe and Asia respectively, with somewhat mixed findings around their impact on womens’ workplace outcomes and overall participation. Furthermore, this topic as a whole has continued to involve limited levels of discussion within the context of the United States.

This paper focuses on the relationship between potentially available informal childcare resources within the United States (specifically, in terms of the potential resources devoted by the grandparents) and the relative impact on maternal wage outcomes, using the National Longitudinal Survey of Youth (NLSY97). The results of this paper will increase our understanding about intergenerational dynamics within the United States, specifically as they pertain to the potential childcare and support for mothers in the workforce, and ultimately will add to the literature around childcare provision and long-term maternal wage outcomes in the US.

# II. BACKGROUND

Within the literature, there remains a great deal of heterogeneity around the *extent* of the wage and workplace impacts of motherhood across national, regional, industrial, racial and socioeconomic categories. When looking more into the underlying causes for this motherhood penalty, a great number of findings have emerged around (1) *human capital factors* of workplace interruptions and disruption (2) *cultural values, biases, and expectations* around womens’ role as employees and as caretakers,and the mediation of these factors through *formal (i.e., corporate and state-level polices)* and *informal support* (i.e., social capital/family dynamics).

In a practical sense, these themes clearly interact and intersect with one another - for example, cultural values and social expectations often inform public policy, social capital, and perceptions (by employers) of a mother’s human capital; (perceived) human capital and/or discrimination in the market, in turn, can also be shaped by the dynamic of formal and informal support around childcare. Together, these themes have been found to drive the heterogeneity of maternal workplace impacts on national and localized contexts.

While much of the early literature around this phenomenon have focused on the United States as well as Western European and Nordic countries (e.g., Harkness and Waldfogel 1999; Misra, Budig, and Moller 2005), more recent studies have begun to emerge from Eastern (e.g., Yu 2018; Zhang et al. 2008; Jennings 2009) and Southeastern Asia (e.g., Bedi et al. 2018) as well as from Latin America (Villanueva and Lin 2020). The expansion of literature beyond the United States and Europe has been vital for broadening our understanding of the key drivers of motherhood wage impacts as countries in East and Southeast Asia and in Latin America have vastly different political, economic, and cultural climates - not only when compared to North America and Europe, but also when compared to one another.

In this section I will first provide a more detailed overview of the definition of the motherhood penalty. I will then describe a number of notable hypotheses, findings, and gaps in understanding around the drivers of the motherhood penalty as found in earlier and more recent literature around the world. Based on these observations, I will then present several findings and current gaps in literature around how these trends and characteristics have combined to increase the maternal wage gap and to worsen maternal occupational outcomes over time (on average), keeping in mind how these findings follow or deviate from motherhood penalty literature in other national contexts.

## Defining and Measuring the Maternal Wage Gap

While defining the motherhood penalty as a construct may seem straightforward, the approaches that researchers have used to define and measure this construct and its explanatory conditions have varied in ways that could meaningfully impact the implications of any findings.

The majority of researchers have used the term ‘motherhood penalty’ to refer primarily to the aggregate wage effect of motherhood on womens’ wages; however, some researchers have also discussed the ‘penalty’ in terms of workplace outcomes such as hiring, firing, and promotion timing (e.g., Correll et al. 2007); still others have referred to the ‘penalty’ in terms of more amorphous concepts such as ‘general well being and satisfaction’ (Mu and Xie 2016; Kelley et al. 2020). While the latter definitional method presents compelling dimensions of the topic, this paper will primarily focus on the literature around the *impact of motherhood on wages*, some discussion will also be provided over workplace outcomes (i.e., hiring, firing, promotions) as these factors are often key inputs in a working woman’s career trajectory and therefore in her wage outcomes.

While many have generally measured the motherhood penalty using fixed-effects longitudinal panel models to control for individual heterogeneity and to make a stronger case for the direction of causality, the time frame under study is sometimes restricted to women of childbearing age (defined differently in different papers) and other times is expanded to include all ‘professional/working years’ of a woman’s life, i.e., 25-64 (De Linde Leonard and Stanley, 2020). As one may expect, the general practice has centered around comparing the sample set of women who *do* become parents with women who *do not* within the studied period of time.

In terms of the causal models, while most papers have accounted for work experience and tenure factors (which are generally accepted to be key inputs in workplace and wage outcomes due to their impact on worker productivity and bargaining), approximately 40% did not control or mediate for these factors (De Linde Leonard and Stanley, 2020). Furthermore, while the ‘wage penalty’ has been generally noted to be best measured on a per-child basis (as each child requires additional resource allocation from the parents), some papers have coded motherhood as a dummy variable, i.e., comparing working mothers and working non-mothers (De Linde Leonard and Stanley, 2020). These approaches for measuring the motherhood penalty often fail to account for key inputs, and will not be referred to throughout this paper unless otherwise specified.

## Human Capital Theory, Lost Productivity, and Specialization

One of the most pervasive ways that researchers have examined the motherhood wage gap is through the lens of *human capital theory* (Becker 1985). This theory posits that the negative career impacts attributable to motherhood reflect the *time and productivity loss incurred* as a result of key labor market decisions made by working women each time they have a child. Throughout the world, it has been common for women to leave the *workforce*, to *change employment status* from full-time to part-time*,* or to *change employers* or *industry* in search of work environments that are more accommodating or flexible for working mothers (Gough and Noonan 2013). Under the *human capital* framework, these decisions can interrupt working mothers’ career trajectory and development and reduce “value” as employees, thus leading to reduced career outcomes and wages in the long term (Becker 1985).

A number of studies dating back as early as 1979 (Hill 1979) have found that human capital factors have accounted for a significant portion of the maternal wage gap. In fact, a study by Gupta and Smith (2008) found that, after controlling for time-consistent variables (e.g., age, race, preferences for household work), mothers in a Danish longitudinal dataset were found to have no statistically significant pay gap; in this study, the authors concluded that the effect was the loss of human capital accumulation during childbirth periods.[[1]](#footnote-0)

The human capital theory is incomplete without considering the resources and dynamics available to working women; namely, *household specialization* and *social support networks.* Raising children is often costly and requires a re-allocation of time and monetary resources within a family unit. When child-rearing responsibilities fall solely to the parents (immediate family), this can often increase the likelihood of greater levels of *household* *specialization*, wherein one parent devotes comparatively more time and energy on income-generating tasks while the other devotes more devotes comparatively more time toward household management and childcare tasks. Specialization has been found to be a pervasive practice among married couples with children, and was of interest when studying the motherhood penalty because prior research has found that within marriages and households, the ‘homemaker’ role is more likely to be transferred predominantly to the wife (Becker 1981). When exploring the question of whether the differential maternal/paternal occupational outcomes have been due primarily to one’s specialized role (i.e., which individual is ‘assigned’ to income-generating vs household work), Killewald and Gough (2013) found that specialization alone does not reduce the gender gap for working parents - that is, it does not appear that ‘fathers’ with greater ‘household work’ specialization do not face similar wage penalties to ‘mothers’ with the same specialization.

To this point, it is important to consider that the relative importance of human capital in predicting the wage penalty is dependent on *social*, *cultural*, and *policy*-based factors. These factors can impact the relative *economic and social costs and benefits* that working mothers must weigh when making decisions about professional development and career disruption before, during and after childbirth.

## Cultural Bias and Gender Discrimination

While human capital and worker productivity factors may explain a great deal of the wage and workplace impacts, researchers have noted the importance of cultural-societal norms and expectations about how women should behave as parents and as workers, and how these norms and expectations may inform the biases and discriminatory actions of employers and coworkers as well as friends and family members. For example, in 2017, the Pew Research Center reported that 77% of Americans felt that women had a lot of pressure to be an involved parent (compared to 49% feeling the same pressure for men).[[2]](#footnote-1) Per Blair-Loy (2005), a tension has emerged between the expectation (set by cultural essentialist beliefs) that mothers devote the majority of their energy to their children and the perception that a ‘good’ or ‘productive’ employee prioritizes work above all else.

In one of the most-cited works on the topic of maternal workplace outcomes, a quasi-experiment and audit conducted by Correll et al. (2007) found that under experimental settings, test subjects in the US asked to make hiring and offer decisions tended to view mothers as less productive and less competent (compared to childless women); subsequently these subjects tended to offer lower levels of average pay and time off to mothers on average. After a resume audit published in the same paper (following the work of Bertrand and Mullainathan 2003), Correll et al. (2007) found that, given ceteris paribus, experimental applications sent out that alluded to motherhood were less likely to receive interviews in real-world job postings. No analogous findings were discovered for fathers (Correl et al. 2007). Seeing that both the experiment and audit held the pseudo-’applicants’ experience levels, education, and qualifications constant, the findings of this paper indicate the existence of bias and discrimination toward mothers in key decision-making around corporate hiring, promotion, and firing. This type of discriminatory view of women as ‘mothers first’ and subsequent behavior were also noted in Roth’s study (2006) of gender inequality in Wall Street, as well as in tht paper of Bernard and Correl (2010), wherein mothers appear to focus on and excel within their professional spheres (running counter to the ‘nurturing mother’ role).

These gender essentialist biases are pervasive outside the workplace as well - for example, Becker (1981) found that American men have not taken on a proportionate amount of household and childcare responsibilities even as women (on average) have increased in income-generating workforce representation. Culturally, working mothers often feel pressured (e.g., by peers and family members) to continue to pursue a larger share of traditional household obligations, and to pursue wage parity with their male coworkers and non-mothers in the workplace (Eagly 1984). For some, this also culminates in societal pressure around the necessity of mothers to seek less strenuous work, to work fewer hours, or even to simply stay at home and pause income-generating work. In a 2019 survey conducted by Pew Research Center, working mothers were 22% more likely than working fathers (54 vs 44%) to say that they needed to reduce their work hours as a result of their parenting responsibilities

In short, as working mothers navigate the biases, and norms set by cultural beliefs about their dual roles as mothers and as professionals, they will continue to face challenges that will impact their career trajectory, as these cultural elements will inform their workplace discrimination and societal pressures faced on a daily basis.

Given that the degree and type of gender essentialism and valuation of economic productivity and egalitarianism tend to vary across cultural contexts, it would follow that there would correspondingly exist varying outcomes for working mothers cross-nationally. In a cross-national comparison of national- and individual-effect maternal wage differences, Budig et al. (2012) found that ‘cultural attitudes[[3]](#footnote-2) can amplify, and even change the nature of, associations between parental leave, publicly funded childcare, and maternal earnings.’

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## The Influence of Childcare - Formal Childcare and Social Support

Woven throughout the literature on the motherhood penalty are the pertinence of the amount of time and energy spent (and support given) to working mothers in childcare and household work. Given the literature around human capital theory, the degree to which these responsibilities fall on the working mother could potentially determine career trajectory interruption and overall workplace outcomes for mothers. In the event that childcare is available to a large proportion of working women (e.g., publicly subsidized childcare), it may be posited that reduction of childcare burden may even moderate the degree of workplace discrimination.

In the realm of public policy, several studies primarily studying European countries have found that widespread availability of publicly provided or government-subsidized childcare has been correlated with a reduction in the ‘childcare burden’ from the working mother’s decision-making process and thus with better workplace outcomes (e.g., proportion of mothers seeking full time work) for mothers in the aggregate (Hallden et al. 2016, Cukrowska-Torzewska, 2017, Pettit and Hook 2005). At a disaggregated level, these findings are a bit more complex: for example, Mandel and Shalev (2005) noted that in Scandinavian countries with widely available state-provided childcare, women with higher education may be disincentivized to seek high skilled work (as publicly funded childcare is more subsidized by lower-paying work).

In addition to the formalized framework of childcare provision, for many families around the world, *community-based* and *multigenerational* *support networks* have allowed for (informal) shared childcare and household responsibilities. In this context, it had often been speculated that there would be some level of relief from household and childcare burden for the mother, thus resulting in reduction of interruption to her professional life and development. Currently, a majority of studies surrounding maternal outcomes and multigenerational or communal (informal) child care have emerged from regions such as China, and appear to point to a higher level of complexity in terms of how these dependencies reflect on the working mother’s household and caretaking work burden. While some studies have confirmed the finding that the presence of grandparents within the household can reduce the childcare burden from the mother (Shen 2013), a more recent study by Yu and Xie (2018) found that women suffered *larger* motherhood wage penalties when living with their husband’s parents (comparatively to when they live alone). While this finding appears counterintuitive, Yu and Xie speculated that such findings were not unreasonable, as ‘*patrilocal coresidence*’ has traditionally been associated with ‘filial piety’ and traditionalist beliefs regarding gender roles in China. Thus, in this case, one may consider the existence of spurious causality due to cultural values, as traditionalist homes in China (with patrilocal multigenerational cohabitation) could also indicate societal pressure for women to prioritize unpaid household responsibilities over paid work.

To date, the topics around formal and informal childcare availability and the impact on maternal workplace outcomes have not been explored in greater detail In the American and Western European context (Yu et al. 2018). Within the realm of state-level childcare provision (formal childcare), relatively earlier research has been conducted in EU countries, due to a combination of widely available data and relatively high but varying public service provision in these countries. Within the United States, however, this topic is beginning to gain popularity; to date, one working paper has been drafted by Benjamin Gurrentz (2021) using data from the Census Bureau, looking at maternal workplace *participation* in relation to *subsidy provision level* of the Child Care Development Fund. This paper found a positive relationship between subsidy provision and workplace participation.

Similarly, while there has been some research (primarily qualitative) about multigenerational families and the impact on maternal career interruptions and wage differentials (relative to working women without children), this research has been performed more extensively in more family-based regions such as Asia and Latin America, with limited analogous studies done in the United States (and limited literature around this topic exploring network factors such as the strength of ties and non-familial relationships). The paucity of literature about informal childcare provision by the parents’ network and the impact on maternal workplace outcomes may be due in part to historically insufficient data sets and historically lower levels of multigenerational co-residence in the United States. As multigenerational households have become steadily more popular (rising to 20% as of 2016 per Cohn and Passel 2018) in the US, this topic in particular has become increasingly relevant. Within this topic, Pessin et al. (2020) was able to leverage US data on intergenerational support, finding that adult daughters’ fertility decisions are positively impacted by their parents’ propensity to provide support in the form of time or money.

This paper adds to the emerging topic of intergenerational care frameworks by exploring the relationship between the potential resources that can be devoted by the grandparents and the relative impact on *maternal wage differentials* and *workplace participation*. Using National Longitudinal Survey of Youth (NLSY97), I will be looking at the impact of potential grandparental support and maternity status on respondents’ wages and labor force participation over time.

# III. METHODOLOGY

## Hypotheses

My hypotheses focus on the relationship between grandparents’ propensity toward intergenerational support and the magnitude of the maternal wage gap and workplace outcomes.

Hypotheses 1 and 2 follow our understanding of the relationship between accessible childcare and working mothers’ wage disparities in the aggregate (as found by Hallden et al. 2016), and are logically aligned with the findings of Pessin et al. (2020) that higher levels of intergenerational support (i.e., grandparents in the US) correspond with higher levels of fertility.

***Hypothesis 1: Working mothers with parents more likely to be able to support them in childcare (with time and money) will be more likely to experience lower wage disparities over time compared to working mothers without parents able to support them in childcare.***

***Hypothesis 2: Working mothers with parents more likely to be able to support their children (with time and money) will be less likely to reduce their time commitment in their professions over time compared to working mothers with parents less likely to support them.***

***Hypothesis 3: Comparatively, working mothers with higher levels of education will be less impacted (in terms of wage differential) by their parents’ capacity for support (of time and money)***

More clearly, it would be hypothesized that mothers with higher levels of education would be more likely to work in highly skilled work, have more financial ability to access paid childcare, and thus would be less influenced by parental support of time or money.[[4]](#footnote-3)

## Data Set and Models

As noted above, I would use the NLSY97, a highly comprehensive longitudinal panel dataset compiled by the Bureau of Labor Statistics with coverage over topics such as demographic, education, and employment statistics, as well as some questions covering factors such as health, family, and attitudes. Respondents to this data set were 12 - 16 as of December 1996, and the survey has been conducted annually up to 2011 (and subsequently biannually).

For the purposes of this study, I plan to look at women in their early- to mid- 20s (i.e., 2010), as this is a point at which most individuals in America have graduated high school, many have attained their first higher-level degree, and many have entered the workforce as full-time professionals.

Following the method of Budig and England (2005) and others, I plan to run fixed-effects models to control for individual heterogeneity and focus on change over time. I would want to control for factors such as gender, demographic factors (e.g., race, income of parents), and education level. My primary dependent variable will be income from labor, but I also plan to use a variable of *average paid work per week*. My independent variables will be the interaction between the *number of children* and *grandparents’ propensity for intergenerational support* (at any given point in time). Within the latter measure, I plan to incorporate measures such as *grandparental distance from parents*, *general income levels,* and *relationship with the respondent (i.e., working mother).*

## Potential Limitations

Methodologically, potential limitations may lie in the sample size (if we are for example to look at only individuals of certain income levels with grandparental *time support,* the sample size could potentially be low - however, this has not yet been confirmed). Similarly, some of the factors that would be useful to look at in a disaggregated manner (e.g., specific racial groups or recent immigrants) to understand more the breakdown of culture and the models specified above may be limited due to sample size limitations.

In terms of the research itself, these are not necessarily a *direct measure* (e.g., of how many hours in fact the grandparents are devoting to child care on a weekly basis). Thus, some inference will be made for these measures (though as this paper is more concerned with the general availability and capacity of the grandparents to support the parents, this limitation may not be a major one).

**References**

Andersen, S.H. (2018), Paternity Leave and the Motherhood Penalty: New Causal Evidence. J. Marriage Fam, 80: 1125-1143. <https://doi.org/10.1111/jomf.12507>

Asadullah, M. N., & Xiao, S. (2020). The changing pattern of wage returns to education in post-reform China. Structural Change and Economic Dynamics, 53, 137–148. https://doi.org/10.1016/j.strueco.2020.01.010

Attané, I. (2012). Being a woman in China today: A demography of gender. China Perspectives, 4,5–15.

Barroso, A., & Horowitz, J. M. (2021, March 22). *The pandemic has highlighted many challenges for mothers, but they aren't necessarily new*. Pew Research Center. Retrieved October 7, 2021, from https://www.pewresearch.org/fact-tank/2021/03/17/the-pandemic-has-highlighted-many-challenges-for-mothers-but-they-arent-necessarily-new/.

Bedi, A., Majilla, T., Rieger, M. (2018). Gender norms and the Motherhood Penalty: Experimental evidence from India. IZA Institute of Labor Economics. Retrieved April 17, 2021, from [https://www.iza.org/publications/dp/11360/gender-norm-](https://www.iza.org/publications/dp/11360/gender-norms-and-the-motherhood-penalty-experimental-evidence-from-india)

[and-the-motherhood-penalty-experimental-evidence-from-india](https://www.iza.org/publications/dp/11360/gender-norms-and-the-motherhood-penalty-experimental-evidence-from-india)

Becker, G. 1981. A Treatise on the Family. Cambridge, MA: Harvard University Press

Becker, G. (1985). ‘Human Capital, Effort, and the Sexual Division of Labor.’ Journal of Labor Economics 3: S33– 58.

Blair-Loy, M. (2005). Competing Devotions: Career and Family Among Women Executives. Journal of Marriage and Family, 67(3), 782–783. <https://doi.org/10.1111/j.1741-3737.2005.00170.x>

Budig, M. J., & England, P. (2001). The Wage Penalty for Motherhood. American Sociological Review, 66(2), 204. https://doi.org/10.2307/2657415

Budig, M. J., & Hodges, M. J. (2010). Differences in disadvantage variation in the motherhood penalty across White women’s earnings distribution. American Sociological Review, 75(5), 705–728. <https://doi.org/10.1177/0003122410381593>

Budig, M. J., Misra, J., & Boeckmann, I. (2012). The Motherhood Penalty in Cross-National Perspective: The Importance of Work-Family Policies and Cultural Attitudes. Social Politics: International Studies in Gender, State & Society, 19(2), 163–193. <https://doi.org/10.1093/sp/jxs006>

Budig, M. J., Misra, J., & Boeckmann, I. (2016). Work–Family Policy Trade-Offs for Mothers? Unpacking the Cross-National Variation in Motherhood Earnings Penalties. *Work and Occupations*, *43*(2), 119–177. <https://doi.org/10.1177/0730888415615385>

Cameron, L., Erkal, N., Gangadharan, L., & Meng, X. (2013). Little Emperors: Behavioral Impacts of China’s One-Child Policy. Science, 339(6122), 953–957. https://doi.org/10.1126/science.1230221

Chan, S. (2000). Gender and Relationship Roles in the Analects and the Mencius. *Asian Philosophy 10,* no. 2: 117. Academic Search Premier, EBSCO host. http://www-tandfonline-com.proxy.lib.pdx.edu/doi/abs/10.1080/09552360050121119

Chen P-C. (1981). Rural health and birth planning in China. North Carolina: International Fertility Regulation Program,

Chen, F., Short, S.E., & Entwisle, B. (2000) The impact of grandparental proximity on maternal childcare in China. *Population Research and Policy Review* **19,** 571-590 <https://doi.org/1.1023/A:1010618302144>

Chen, F. (2004). The division of labor between generations of women in rural China. Social Science Research, 33(4), 557–580. https://doi.org/10.1016/j.ssresearch.2003.09.005

Chen, F. (2005). Employment transitions and the household division of labor in China. Social Forces, 84(2), 831–851. doi:10.1353 /sof.2006.0010.

Cohn, D. V., & Passel, J. S. (2020, July 27). *Record 64 million Americans live in multigenerational households*. Pew Research Center. https://www.pewresearch.org/fact-tank/2018/04/05/a-record-64-million-americans-live-in-multigenerational-households/.

Cools, S., Fiva, J. H., & Kirkebøen, L. J. (2011). Causal effects of paternity leave on children and parents (Discussion Paper 657). Oslo, Norway: Research Department, Statistics Norway.

Correll, S., Benard, S., & Paik, I. (2007). Getting a Job: Is There a Motherhood Penalty? American Journal of Sociology, 112(5), 1297-1338. doi:10.1086/511799

Cukrowska-Torzewska (2017). Cross-country evidence on motherhood employment and wage gaps: the role of work-family policies and their interaction. Soc. Polit. Int. Stud. Gend. State Soc., 24 (2), pp. 178-220

Datta Gupta, N., Smith, N. & Verner, M. PERSPECTIVE ARTICLE: The impact of Nordic countries’ family friendly policies on employment, wages, and children. Rev Econ Household 6, 65–89 (2008). <https://doi.org/10.1007/s11150-007-9023-0>

Deutsch, F. M. (2006). Filial Piety, Patrilineality, and China’s One-Child Policy. Journal of Family Issues, 27(3), 366–389. <https://doi.org/10.1177/0192513X05283097>

Directive 2006/54/EC of the European Parliament and of the Council of 5 July 2006 on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast)., OJ 2006 L 204.

Du, F., & Dong, X. (2013). Women’s Employment and Child Care Choices in Urban China during the Economic Transition. Economic Development and Cultural Change, 62(1), 131–155. <https://doi.org/10.1086/671714>

Fei HT. Peasant life in China. Worcestershire: Read Books Ltd; 2013

Feng, X., Poston, D., & Wang, X. (2014). China's One-child Policy and the Changing Family. *Journal of Comparative Family Studies,* *45*(1), 17-29. Retrieved May 11, 2021, from http://www.jstor.org/stable/24339438

Gough, M., & Noonan, M. (2013). A Review of the Motherhood Wage Penalty in the United States. Sociology Compass, 7(4), 328–342. <https://doi.org/10.1111/soc4.12031>

Halldén, K., Levanon, A., & Kricheli-Katz, T. (2015). Does the Motherhood Wage Penalty Differ by Individual Skill and Country Family Policy? A Longitudinal Study of Ten European Countries. Social Politics: International Studies in Gender, State & Society, 23(3), 363–388. https://doi.org/10.1093/sp/jxv032

Harkness, S., & Waldfogel, J. (1999). *The family gap in pay: evidence from seven industrialised countries*. LSE Research Online. http://eprints.lse.ac.uk/6481/.

Hill, Martha. 1979. "The Wage Effects of Marital Status and Children." Journal of Human Resources 14:579-94.

Hochschild, Arlie Russell. *The Second Shift: Working Parents and the Revolution*. New York: Avon Books, 1990.

Jennings, K. (2019). Is the Glass Ceiling a Motherhood Ceiling After All? The Impact of Childbirth on Gender Gaps in the South Korean Labor Market. Lund University School of Economics and Management

Ji, Y. (2015). Between Tradition and Modernity: "Leftover" Women in Shanghai. Journal of Marriage and Family, 77(5), 1057-1073. Retrieved April 12, 2021, from <http://www.jstor.org/stable/24582721>

Ji, Y., Wu, X., Sun, S. *et al.* (2018) Unequal Care, Unequal Work: Toward a more Comprehensive Understanding of Gender Inequality in Post-Reform Urban China. *Sex Roles* 77, 765–778 (2017). <https://doi.org/10.1007/s11199-017-0751->

Jin, Y., Manning, K. E., & Chu, L. (2006). Rethinking the ‘iron girls’: Gender and labour during the Chinese cultural revolution. Gender & History, 18(3), 613–634. doi:10.1111/j.1468-0424.2006.00458.x.

Johansson, T. (2011). Fatherhood in Transition: Paternity Leave and Changing Masculinities. Journal of Family Communication, 11(3), 165–180. https://doi.org/10.1080/15267431.2011.561137

Jia, Y. (2018) *The Impacts of Ending China's One-Child Policy*. The Cornell Policy Review. http://www.cornellpolicyreview.com/the-impacts-of-ending-chinas-one-child-policy/.

Kelley, H., Galbraith, Q., & Strong, J. (2020). Working moms: Motherhood penalty or motherhood return? The Journal of Academic Librarianship, 46(1), 102075. https://doi.org/10.1016/j.acalib.2019.10207

Killewald, A., & Gough, M. (2013). Does Specialization Explain Marriage Penalties and Premiums? American Sociological Review, 78(3), 477–502. <https://doi.org/10.1177/0003122413484151>

Ko, Dorothy, Haboush, JaHyun Kim, and Piggott, Joan, eds. 2003. Women and Confucian Cultures in Premodern China, Korea, and Japan (1). Berkeley, US: University of California Press. 112. ebrary.http://site.ebrary.com/lib/portlandstate/reader.action?docID=10058585

Li, Yuhui (2000). Women’s Movement and Change of Women’s Status in China. Journal of International Women's Studies, 1(1), 30-40.Available at: <https://vc.bridgew.edu/jiws/vol1/iss1/3>

de Linde Leonard, M., & Stanley, T. D. (2020). The Wages of Mothers’ Labor: A Meta-Regression Analysis. Journal of Marriage and Family, 82(5), 1534–1552. <https://doi.org/10.1111/jomf.12693>

Mandel, H. & Shalev, M. 2009. “Gender, class and varieties of capitalism”, in Social Politics, Vol. 16, No. 2, pp. 161–181.

Mari, G. Cutuli,G. (2020). Do Parental Leaves Make the Motherhood Wage Penalty Worse?, European Sociological Review,;, jcaa048, <https://doi.org/10.1093/esr/jcaa048>

Maternity & Marriage Leave in China - INS Global. INS Global: Global Expansion Simplified. (n.d.).https://ins-globalconsulting.com/china-labor-law-guide/marriage-maternity-leave-policy-china/.

Maurer-Fazio, Margaret, Thomas G. Rawski, and Wei Zhang. "Inequality in the rewards for holding up half the sky: gender wage gaps in China's urban labour market, 1988-1994." The China Journal (1999): 55-88.

Misra, J., Moller, S., & Budig, M. J. (2007). Work—Family Policies and Poverty for Partnered and Single Women in Europe and North America. Gender & Society, 21(6), 804–827. <https://doi.org/10.1177/0891243207308445>

MOE (Ministry of Education, China) 1952. Kindergarten Provisional Outlines (Trial draft).

Mu, Z., & Xie, Y. (2016). 'Motherhood penalty' and 'fatherhood premium'? Fertility effects on parents in China. *Demographic research*, *35*, 1373–1410. <https://doi.org/10.4054/DemRes.2016.35.47>

Pettit, B. & Hook, J. (2005). ‘The Structure of Women’s Employment in Comparative Perspective.’ *Social Forces 84*(2): 779–801.

Potts M. (2006). China's one child policy. BMJ *(Clinical research ed.)*, *333*(7564), 361–362. <https://doi.org/10.1136/bmj.38938.412593.80>

Pregnancy Discrimination Act of 1978, Pub. L. No. 95-555, 92 Stat. 2076 (codified at 42 U.S.C. § 2000e-(k) (1976 & Supp. 1 1978)).

Regulations Concerning The Labor Protection for Female Workers and Employees, CHN-1988-R-1644 (1988).

Schwank, S. E., Gu, C., Cao, Z., Andersson, E., Jiang, H., Ding, Y., & Lindgren, H. (2018). China’s child policy shift and its impact on Shanghai and Hangzhou women’s decision-making. International Journal of Women’s Health, Volume 10, 639–648. <https://doi.org/10.2147/ijwh.s172804>

*Shanghai Municipal Commission of Health and Family Planning Institute.* 2017. [Accessed September 28, 2018]. Available from: <http://www.wsjsw.gov.cn/wsj/>

Short, S.E., Zhai, F., Xu, S., & Yang, M. (2001). China's One-Child Policy and the Care of Children: An Analysis Using Qualitative and Quantitative Data. Social Forces 79(3), 913-943. [doi:10.1353/sof.2001.0025](http://doi.org/10.1353/sof.2001.0025).

Special Rules on the Labour Protection of Female Employees (Order of the State Council (No.619)), CHN-2012-R-95280 (Adopted 2012-04-28)

Stauffer, B. (2020, April 29). *China: Gender Discrimination in Hiring Persists*. Human Rights Watch.https://www.hrw.org/news/2020/04/29/china-gender-discrimination-hiring-persists.

Stevenson, A., & Chen, E. (2019). In China, working mothers say they are fired or sidelined. Retrieved April 12, 2021, [https://www.nytimes.com/2019/11/01/business/ china-mothers-discrimination-working-.html](https://www.nytimes.com/2019/11/01/business/china-mothers-discrimination-working-.html)

Sudbeck, K. (2012). The Effects of China's One-Child Policy: The Significance for Chinese Women.

Villanueva, A., Lin, K. (2020). Motherhood Wage Penalties in Latin America: The Significance of Labor Informality, Social Forces, Volume 99, Issue 1, Pages 59–85, <https://doi.org/10.1093/sf/soz142>

World Economic Forum - Data Explorer. (2019). Retrieved April 16, 2021, from <http://reports.weforum.org/global-gender-gap-report-2018/data-explorer/?doing_wp_cron=1618584247.1763110160827636718750#economy=JPN>

World Economic Forum - Data explorer. (2019). Retrieved April 16, 2021, from <http://reports.weforum.org/global-gender-gap-report-2018/data-explorer/?doing_wp_cron=1618584247.1763110160827636718750#economy=KOR>

World Economic Forum - Data Explorer. (2019). Retrieved April 16, 2021, from <http://reports.weforum.org/global-gender-gap-report-2018/data-explorer/?doing_wp_cron=1618584247.1763110160827636718750#economy=CHN>

Wu, X., & Zhang, Z. (2010). Changes in educational inequality in China, 1990-2005: Evidence from the population census data. Research in Sociology of Education, 17, 123–152. doi:10.1108/s1479-3539 (2010)0000017007.

Xiao, S. (2016). Intimate power: the intergenerational cooperation and conflicts in childrearing among urban families in contemporary China. J. Chin. Sociol. 3, 18 https://doi.org/10.1186/s40711-016-0037-y

Yu, J. and Xie, Y. (2018), Motherhood Penalties and Living Arrangements in China. J. Marriage Fam, 80: 1067-1086. <https://doi.org/10.1111/jomf.12496>

Zhang, L.(2019). China measure prohibiting hiring discrimination against women issued. Global Legal Monitor. [https://www.loc.gov/law/foreign-news/article/china- measures-prohibiting-hiring-discrimination-against-women-issued/](https://www.loc.gov/law/foreign-news/article/china-measures-prohibiting-hiring-discrimination-against-women-issued/)

Zhang, J., Han, J., Liu, P. W., & Zhao, Y. (2008a). Trends in the gender earnings differential in urban China, 1988–2004. Industrial&Labor Relations Rev i ew, 61 (2), 224–2 43. doi:10 .1177 /001979390806100205.

Zhang, Y., Hannum, E., & Wang, M. (2008b). Gender-based employment and income differences in urban China: Considering the contribu- tions ofmarriage and parenthood. Social Forces, 86(4), 1529–1560. doi:10.1353/sof.0.0035.

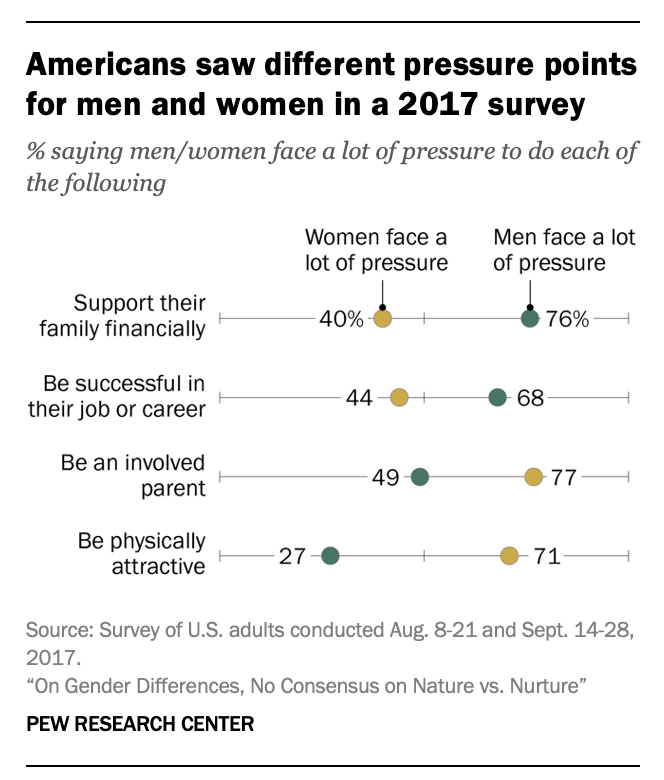
Zuo, J., & Bian, Y. (2001). Gendered resources, division of housework, and perceived fairness—A case in urban China. Journal of Marriage and Family, 63(4), 1122–1133. doi:10.1111/j.1741- 3737.2001.01122.x

Zuo, M. (2021, March 12). *What are typical questions women job applicants are asked that their male counterparts are not?* South China Morning Post. [https://www.scmp.com/news/](https://www.scmp.com/news/people-culture/)

[people-culture/](https://www.scmp.com/news/people-culture/)article/3124236/gender-discrimination-against-women-job-seekers-china-rife.

**Appendix**

**Appendix A**.



*Barroso and Horowitz 2021*

1. However, it must be noted that Denmark (as other Nordic countries) has been traditionally more known for gender-egalitarian laws and attitudes in society and in the workplace (Gupta and Smith, 2008). [↑](#footnote-ref-0)
2. Refer to **Appendix A** (Barroso and Horowitz 2020) [↑](#footnote-ref-1)
3. As measured by ISSP1 ‘Family and Changing Gender Roles’ questions from 1994 and 2002 [↑](#footnote-ref-2)
4. This being said, I still hypothesize that there will exist a statistically significant relationship between individuals’ maternal wage gap (i.e., for women with higher levels of education / human capital) and their parents’ propensity to support them with time and/or money. [↑](#footnote-ref-3)