Resource bargaining and gender display in housework and care work in modern China

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Abstract

This paper analyses data of the China Women Status Survey 2010 to investigate how dual-earner couples allocate routine housework, non-routine housework, and care work between the spouses based on their relative income and working time. Women have longer housework time and undertake a higher proportion of routine domestic work and care work. Men share a higher proportion of non-routine domestic work. Routine housework has a negative association with one's relative contribution to family income and working time. For both men and women living in rural areas, however, relative income forms a curvilinear relationship with routine housework and total housework time. Relative income and working time, however, are poor predictors in the gender division of non-routine housework. Furthermore, they have more complex patterns of association with care work. The results suggest that gender ideology interacts with resource factors in multiple ways to influence the domestic division of labour in China.

Key words: China, domestic division of labour, gender, housework

Introduction

Research on both western developed and East Asian countries has shown that women nowadays still undertake the major share of domestic work (e.g. Bianchi et.al. 2000; Hook 2010; Kan 2008a; Kan and Gershuny 2009, 2010; Kan and Hertog 2017; Oshio, Nozaki, and Kobayashi 2013; Pimentel 2006; Short et al. 2002; Sullivan 2000; Zhang 2017; Zhang, Hannum, and Wang 2008). Most past studies focussed on routine housework such as cleaning and cooking but relatively fewer studies explored the division of labour among different types of domestic work.

Macro trends in time use indicate that factors influencing the gender divide in domestic labour are likely to be different among different types of domestic work. By analysing time diary data of 16 Western countries, Kan, Gershuny and Sullivan (2011) show that from the 1970s onwards, men have gradually spent more time on domestic work and women have spent less accordingly. Nevertheless, the gender convergence in domestic division of labour differs among different types of domestic work. Men's increase in domestic work has concentrated on flexible and non-feminine types of housework such as gardening and home maintenance. Routine housework and traditionally "feminine" types of domestic work, including cooking, cleaning, and care work are still undertaken mainly by women. These findings imply that gendered attitudes towards domestic work play a role in influencing the domestic division of labour.

This paper contributes to the understanding of this topic by investigating the patterns of gender division of labour among different types of domestic work in China by micro-level analysis. We will employ data of the Women's Status Survey 2010, a nationally representative sample that has collected respondents' time spent on housework as well as their intensity of participation in a

number of types of domestic work including cleaning, cooking, shopping, home-repairs, paying utility bills, and care work. We will examine how relative economic resources and time availability are associated with domestic work participation in dual-earner couples. We will also investigate how these associations might vary among different types of domestic work in rural and urban China. We will then determine the extent to which conventional theoretical approaches to domestic division labour – the resource-based approach and the gender-centred approach – are useful frameworks for explaining the allocation of different types of domestic work between spouses in China, and then discuss implications for gender equality in domestic division of labour.

Socioeconomic Changes and the Domestic Division of Labour in China

Economic Development

In the past four decades, China has seen a fast increase in its economic capacity and a profound transformation of its economic structure and patterns of capital and land ownership, especially since the mid-1990s. Research has shown that a service economy in which non-manual jobs with less physically demanding working environments enable women to develop their careers in the labour market (Pitt et al. 2012; Rosenzweig and Zhang 2013). The expansion of service industry has offered women more chances to develop their talents in the labour market.

Catering to the labour demand of industrial restructuring, the Chinese government has implemented a series of policies to increase the educational qualifications of both men and women, including nine-year compulsory education in the late 1980s and higher education reform and expansion in the late 1990s (Whyte and Parish 1985; Wolf 1984). As a result, the gender gap in education

has been narrowing significantly. For those born after 1982, women even surpassed men in terms of college enrolment (Wu and Zhang 2010; Yeung 2013). Increased educational levels among women has enhanced their chances of entering higher-paying professional occupations (Bauer et al. 1992), which make them more economically independent over time.

Birth-Control Policies

Since the early 1970s, China's birth-control policies, such as the "later-longer-fewer" campaign in 1971, and a more stringent one-child policy in 1978, have lowered China's fertility rates significantly, exerting far-reaching influences on gender inequality. As Wu et al. (2014) discovered, the implementation of birth-control policies largely contributes to the closing of the gender educational gap of young generations, specifically post-1980 birth cohort. Regardless of gender, more education exposes individuals to more modern values and egalitarian gender attitude. Alongside women's growing economic independence, women's empowerment within the family may be expected improve substantially (Wu et al. 2014).

Market Reform and the Complex Gender Ideology in China

In China, unlike many developed Western countries, the rapid economic development has not been accompanied by with a growing female advantage in the labour market as expected since market reform (for a review, see Ji et al. 2017). Under state-socialism, the state made considerable efforts in implementing policies to equalize the roles of men and women since its founding. With the socialist ideological propaganda in China during its founding and economic development period, women were encouraged to perform an

economic role in society. Both men and women shared the obligations to serve the socialist state equally through the *danwei*, in which dining halls, childcare and healthcare centres and other service were provided to the members to support socialist production. However, in the domestic sphere, women's family roles have never been challenged, they remained gendered, only alleviated by the *danwei* system to some degree.

Since the economic reforms of the 1980s, the market has replaced the redistributive state and became the principal agent of social stratification (Cao and Nee 2000; Entwisle and Henderson 2000; Nee 1989, 1991, 1996; Nee and Matthews 1996). Many claim that there is a growing disadvantage of women in the labour market since economic reform (e.g. He and Wu 2017, 2018; Zhang, Han, Liu, and Zhao 2008; Zhang and Hannum 2015; Zhang, Hannum, and Wang 2008). The tabulation of China census and mini-census sample data reveals that, between 1980s and 2000s, although Chinese women's labour force participation rate was significantly higher than many western industrialized countries, women's labour market participation rate has been falling during the rapid industrialization since the late 1980s (Wu and Zhou 2015). The figures were 85 per cent in 1982, 84 per cent in 1990 and 62 per cent in 2000 for women aged between 20 and 54 living in urban areas.¹ Moreover, women are far more likely than men to work on a part-time basis. In 2005, 42 per cent of female workers aged between 20 and 64 part-time, compared to 22 per cent of male workers in the same age range.² Furthermore, the female-to-male ratio of hourly wage in China declined from 0.863 in 1988 to 0.762 in 2004 in urban areas (Zhang et al. 2008). As for the domestic division of labour, men of the post-reform generations spend less time on housework than those of the pre-reform generation (Zhang 2017).

The driving forces behind these changes are two-fold. On the one hand, the retreat of state provision of various social services benefit has enhanced the work-family conflicts for women. On the other, there was a resurgence of gender essentialism (Ji 2015), which naturalizes women's reproduction and household duties, and deems women as inferior and less productive labour, making them more likely to be discriminated against in the labour market. Qualitative studies on Chinese couples have discovered that gender attitudes and family values play a central role in the negotiation of domestic division of labour (Fang 2011; Gao and Zheng 2012; Tong and Liu 2015; Yang 2014; Zuo and Bian 2001). Many people holding liberal gender attitudes still maintain a traditional form of gender division of labour (Pimentel 2006), not to mention those holding traditional gender attitudes.

Given the aforementioned trends in educational attainment and employment rates, we might expect to find both similarities and differences in the domestic division of labour in China compared with the patterns in Western countries. The increase in women's educational level should have given incentives for women to participate in the labour market and bargain for a more equal share of domestic labour at home. The relatively high level of women's labour market participation and the socialist propaganda in gender equality might have pushed men to undertake a bigger share of domestic work.

Differences in Gender Norms and Gender Attitudes Between Rural and Urban Areas

Research has shown women's share of housework has fallen to some extent across cohorts in China (Pimentel 2006), suggesting that more liberal gender role attitudes may contribute to a more equal domestic division of labour.

The association between relative earning and housework hours may vary between rural and urban areas. Gender norms are more traditional in rural areas than in urban areas in China (Short et al. 2002). Owing to the rapid industrialization and economic development of urban areas, it is likely that relative resource factors will have a stronger effect on the domestic division of labour in urban areas than in rural areas. In China, there is large rural-urban divide, not only in socio-economic development but also on modernity of gender norms, it is especially the case since the economic reform. The reform prioritized economic construction in urban China, made these areas receive increasing exposure to Western world. Economically, urban areas benefit from increasing international trade, and open-door economic policies. Ideologically, urban areas become increasingly keen to advocate gender equality brought by "rising tide" of gender egalitarian attitude and cultural change across the world. Hu and Scott (2016) find that patrilineal and gender values are more traditional in rural areas than in urban areas in China, and higher education is associated with more liberal values in both urban and rural areas.

Types of Domestic Work

It is important to analyse domestic work by different tasks because gendered processes based on relative resources, gendered expectations and time constraints may work differently for different tasks. Past research has classified housework into feminine tasks and masculine tasks (Berk 1985; Gager, Cooney, and Call 1999; Shelton 1990; Shelton and John 1996; South and Spitze 1994). This classification was based on gender stereotypes on these tasks. For example, cooking and cleaning were often considered as feminine (Twiggs, McQuillan, and Ferree 1999) but others such as home maintenance as masculine (Coltrane 2000).

More recent research defines housework tasks according to how demanding they are in terms of time and schedule, and whether it is more routine or non-routine (Kan 2008a; Kan, Sullivan, and Gershuny 2011). Tasks such as cooking and cleaning, which people have little control over their schedule, are referred to as routine tasks. On the other hand, home maintenance is considered to be a non-routine task as it does not usually to be performed regularly. As to grocery shopping, it is considered to be routine but also “gender-neutral” (Baxter 2002; Craig, Powell, and Brown 2015). Research has shown that routine housework is mostly undertaken by women (Kan 2008a; Kan, Sullivan, and Gershuny 2011).

It is also important to distinguish housework from care work. Some early studies defined child care and parenting as housework (e.g. Ferree 1990; Hochschild and Machung 1989) However, these studies also acknowledged that care work is a more complex issue than housework and thus requires a distinct, but interrelated, set of analyses (Davis and Greenstein 2013; Ishii-Kuntz and Coltrane 1992). Care time is closely related with ideal of parenthood and child care and is found to be positively associated with income and educational attainment (Gauthier, Smeeding and Furstenberg 2004; Sullivan 2010). Care time is also a form of investment in children’s education. Time use research has shown that highly educated fathers in particular spend more time on child care than other fathers (Sullivan 2010). More recent studies treated housework and care work as distinct concepts and focused on either housework (e.g. Lee and Waite 2005; Sayer 2005; Shelton 1990) or care work (Hofferth and Goldscheider 2010). In this project, we follow the view that housework and care work are distinct, but interrelated, concepts and analyse them in separate models.

Although there is plenty of research on the domestic division of labour, relatively few efforts have been paid to exploring the differences in the gender division among different types of domestic work. This is due partly to the lack of suitable data for the

analysis of different types of domestic work. A typical national survey collects information of housework participation by asking respondents how many hours of housework such as cleaning and cooking that they usually do per week (Kan 2008b; Robinson 1985). These questions focus on routine types rather than non-routine types of housework. What is more, very few surveys have collected time spent on care work. In this regard, time diary data provide a detailed differentiation of various types of domestic work. Research based on these data suggests that gender segregation in domestic work has been a major hurdle to achieving gender equality in the division of domestic labour. Kan, Sullivan and Gershuny (2011) find that men have gradually increased the time spent on domestic work since the 1970s, but the increase has concentrated on flexible types of housework. Routine housework, such as cooking, cleaning, and care work are still undertaken mainly by women. Men undertake little routine housework and concentrate their domestic work time on shopping, home-repairs, and gardening. Nevertheless, care work in Western countries has been on the rise for both men and women.

Theoretical perspectives

Past research on the domestic division of labour has focused on two types of explanations: the resource approach and the gender display approach (Bianchi, Milkie, Sayer, and Robinson 2000; Bittman, England, Sayer, Folbre, and Matheson 2003; Brines 1994; Coltrane 2000; Greenstein 2000; Hook 2010; Shelton and John 1996). The resource-based approach emphasizes rationality and efficiency in the division of time and resources between spouses and is, arguably, gender-neutral in nature. The gender display approach takes gendered norms and expectations into account when explaining the division of housework.

The Resource-based Approach

There are three major arguments in the resource-based approach. First, it is based on the new home economics theory of rationality in the allocation of time between spouses so as to maximize the joint utility of the household (Becker 1981). One of the partners would specialize more on the labour market activities over time and thus accumulate more economic resources than the other. Consequently, the partner who has accumulated more resources will have more power to bargain her- or himself out of housework (England and Farkas 1986). Blood and Wolfe (1960) present evidence that men's bargaining power in households increases proportionately to the levels of income, education, and occupational status compared to their partners. The relative resources argument, which is sometimes referred as "the bargaining perspective", assumes that individuals with conflicting interests both attempt to avoid housework and bargain over who is to perform domestic tasks (Blood and Wolfe 1960; Heer 1963; Lloyd and South 1996; Manser and Brown 1980; McElroy and Horney 1981). The relative resources approach considers the domestic division of labour to be the outcome of continual negotiation and bargaining between the spouses. It also stresses the role of rationality in the domestic division of labour, but argues that both men and women try to maximize their individual welfare and rather than joint utility (Manser and Brown 1980; McElroy 1990; McElroy and Horney 1981; Lundberg and Pollack 1993, 1996).

Second, Gupta (2007) proposes the "autonomy approach" and suggests that absolute, not relative, resources affect how spouses of a couple allocate time to domestic chores. Similarly, Killewald and Gough (2010) follow this approach and emphasize the relevance of socio-economic differences to the division of unpaid labour. They find that women with higher income are more likely to

pay for domestic help, and therefore the relationship between women's income and housework time is curvilinear. In this approach, one's domestic work time is determined by his or her economic income brought into the family relative to the partner's. This approach predicts that a rise in women's contribution in family income will reduce their housework time and increase their husbands' housework time (Bittman et al. 2003). Research on China have found that income and proportion of family income are significant factors in determining the share of housework (Liu, Tong, and Fu 2015; Yang 2006, 2015; Yu and Xie 2012).

Third, according to the time availability perspective, people bargain with time rather than with economic resources. A partner who has more time is expected to do more unpaid work (Blood and Wolfe 1960; Coverman 1985). The partner specializes in labour market work will do less housework (Becker 1991). Recent research on China shows that housework time is negatively associated with paid work time (Yang 2006, 2015; Yu 2014; Yu and Xie 2012).

The Gender-centred Approach

The resource-based approach has been criticised by the gender display perspective, which posits that individuals learn their roles through gendered socialization and re-enact what they perceive a woman and a man should normatively do in a heavily gendered arena like the family. This approach stresses that gender roles are performed in everyday life by "gender display" and "doing gender", and the family is a site for "doing gender" (West and Zimmerman 1987) or the "gender factory" (Berk 1985). The gender-centred approach to the quantitative analysis of the division of housework evolved from studies putting an emphasis on the influence of gender roles (Blair and Lichter 1991; Coverman 1985; Presser 1994) to a more performative approach highlighting the "gender display"

(Baxter and Hewitt 2013; Bianchi et al. 2000; Gupta 2007), and then to a more comprehensive perspective combining gender socialization, roles, expectations, and performance – the “doing gender” approach (Bianchi et al. 2000; Brines 1994; Evertsson and Nermo 2004; Greenstein 2000; Hook 2010; Ting, Perales, and Baxter 2015). The “doing gender” approach emphasizes the performative side of gender, stating that households, are ‘site[s] for doing gender’ where men and women repeatedly and constantly perform and reaffirm their gender identities (Berk 1985; Goffman 1976; West and Zimmerman 1987). Domestic work is not merely determined by time constraints and resources, but also by gender ideology and normative values of gender roles.

In the gender-centred approach, marriage and domestic work provide a platform for the enactment of one’s gender identities (Berk 1985; DeVault 1990; Ferree 1990; South and Spitze 1994). Women may perform their roles as wives and mothers through performing housework. When the gender norm is violated elsewhere in marriage, they will be eager to display their gender identities through housework (Brines 1994). Similarly, men will feel their breadwinner role being challenged when they earn significantly less than their wives and hence will avoid undertaking housework (Brines 1994).

Concurring with the gender display approach, some western studies have found a curvilinear relationship, rather than a linear one, between one’s relative income and housework hours. Brines (1994) shows that the gender-centred model has a higher predictive power than the resource-based approach for economically dependent men. Greenstein (2000) shows that the housework participation rates of women who earn more than their partners are also consistent with a more traditional construct of “femininity”. Similar results were obtained by Bittman et al. (2003) for Australian women and by Evertsson and Nermo (2004) for American women but not for Swedish women. Yang (2014) analyses national survey data of China and finds that married women with a full-time job and higher

income than their husbands still do more housework. She suggests that this is a strategy for high income women to maintain the male-breadwinner gender norm.

However, some studies find only linear relationship between relative income and housework hours (e.g. Evertsson and Nermo (2004) in the case of Swedish couples; Kan (2008a) in the case of UK couples when working hours are taken into account). These findings are consistent with the predictions of the resource-based approach rather than the gender-centred approach. These mixed findings indicate that the impacts of economic resources and gendered expectations on the domestic division of labour depend highly on the societal contexts.

Hypotheses

Following the resource-based approach, we hypothesize that:

H1: For both men and women, housework time is negatively associated with labour market work time.

H2: One's housework time is negatively associated with the share of his or her income in the total family income.

Following the gender-centred approach, men will do less housework and women will do more, when gender roles are violated in their relative earnings. Hence we hypothesize:

H3: Highly economically independent women and highly economically dependent men will be more likely to “display gender” in housework. That is, the relationship between one's share of contribution into the family income and housework time will be convex for women, and concave for men.

Owing to differences gender norms between rural and urban areas, we expect to find that the pattern of association between housework participation and the share of contribution in family income will be different in urban and rural families.

H4: The gender display effect, if any, is more likely to be found in rural families. That is, the association between housework hours and the share of contribution in family income is more likely to be curvilinear in rural families than in urban families.

Finally, time use research has revealed that there is a gender segregation of domestic labour (Kan et al. 2011). The associations between relative income and different types of domestic work are likely to be different. We expect to find that:

H5: There is gender segregation in the domestic division of labour. Women will shoulder a major share of routine types of housework (e.g. cooking and cleaning) and care work. Men will spend a higher proportion of their domestic work time on flexible types of housework (e.g. home-repairs).

We also expect to find that the patterns of associations with time constraint and relative income will vary among different types of domestic work. From the current data sample, we identify three types of domestic work: i) routine housework (including cleaning, cooking, shopping and doing the laundry); ii) non-routine housework (including home-repairs and paying utility bills); and iii) care work (including child care, adult care, and supervising and tutoring young children).

H6a: Routine housework is more time demanding, and is more likely to be determined by bargaining power of respondents derived from income than non-routine housework.

H6b: Routine housework such as cleaning and cooking are generally considered to be feminine types of domestic work, and tend to be influenced by both relative resources and gender norms. Therefore, the gender display effect, if any, is more likely to be observed in routine housework than non-routine housework.

H6c: Under the influences of familial ideals on children as well as the one-child policy, both men and women may place a stronger emphasis on child care and may perform more care work than predicted by the resource-based approach and the time availability approach. Hence care work is influenced less by relative income and working time of respondents than other types of domestic work.

Data and Methods

Data

We employ data of the Women's Status Survey (WSS), which was jointly conducted by the Chinese Federation of Women and the China National Bureau of Statistics in 2010. The WSS is a national survey with a representative sample of individuals aged between 18 and 64. It was a multi-stage stratified clustering probability sampling survey conducted by the Chinese Federation of Women and the China National Bureau of Statistics in 2010. Only one member of each household was sampled in the survey. It contains detailed information about marriage, fertility, and the household division of labour. We restrict the sample to married people living in independent households rather than in extended families because our main interest is on the dynamics of relative resources, time availability and gender ideology between husbands and wives. Since a key objective of our research is to examine the association

between relative economic resources, time constraints arising from labour market work, and the household division of labour, we further restrict our sample to individuals at their prime working age (18-54) who reported that both themselves and their spouses are employed at the time of the survey.³ The resulting sample size is 9,952 (4,816 women and 5,136 men).⁴

Dependent Variables

The WSS asked respondents to report the number of hours and minutes of total housework on the working day prior to the interview. For ease of estimation, we transfer the minutes of housework into hours. Respondents also reported the frequency of participating in cleaning, cooking, dishwashing, supervising children, caring for children, caring for adults, shopping for the household, home-repairs and purchase of coal/gas, each item include 5 categories to show the intensity of the activity, with 1- never doing it, 2 – seldom doing it, 3 – doing half of it, 4 – doing the majority of it, 5 – doing all of it. We reclassify the above nine items of domestic work into three types, routine housework (i.e., cooking, shopping, dishwashing and cleaning), non-routine housework (i.e., home-repairs and coal/gas purchasing), and care work (i.e., supervising children, caring for children and elderly)⁵. To show the intensity of participating activities of each type, we first recode the categories by subtracting each category by 3, so that, instead of ranging from 1 to 5 as previously stated, the newly generated item ranges from -2 to 2; for each type of activity, we then sum up the three items. As a result, the value for each activity type varies from -6 to 6. The higher the numeric value, the higher the intensity of individual participating in the activity and 0 indicates equal participation.

Key Independent Variables

The independent variables of theoretical interest include the number of hours spent on labour market work on the working day prior to the interview, both partners' income in the previous year⁶, the share of one's contribution into family income (defined as one's own income last year divided by the sum of both spouses' last year's income), and the square of the share of contribution in family income.

The models control for age, age-squared, and four-category educational attainment (1-primary education or below, 2-junior high school education, 3-senior high school or equivalent, 4-college or above), as they are related to housework participation and gender role attitudes. The models also control for the number of children under the age of 16 (zero, one, two or more), which affects the amount of housework and care work. Ethnic identity (where Han is the dominant group and non-Han represents all ethnic minorities) is controlled for because gendered and cultural practices of domestic division of labour may vary between them. *Hukou* (household) status is also controlled to capture most of the migration status, since the rural and urban couples are analysed separately. We controlled for health status in our preliminary analysis but not in the final models because it is not significant in the models, and the main conclusions remain more or less the same.

Analytical Strategies

We first estimate the determinants of total housework time, and the level of participation in different types of domestic work. We also model men and women from rural and urban families separately. The estimations are based on Ordinary Least Squares regression analyses.⁷

Findings

Descriptive Statistics

Table 1 shows that there is a gendered pattern of domestic division of labour. Women have longer housework time than men (2.54 hours compared to 0.97 hour a day). Men have slightly longer work hours than women (6.06 hours compared with 5.33 hours) but this is mainly because rural women on average have shorter work hours (4.42 hours). In terms of intensity of undertaking different forms of domestic work, we see a clear gender segregated pattern. Routine domestic work such as cleaning and cooking are mostly undertaken by women and rarely by men. The scores for women and men are 4.11 and -3.07 respectively. The gender divide in routine domestic work is greater in rural areas. Women also undertake the major share of care work (the scores are 1.24 for women and -1.71 for men). Men, on the other hand, are mainly responsible for non-routine domestic work such as home-repairs (the scores are 1.54 for men and -1.68 for women). The descriptive findings are consistent with **H5** on the gender segregation of domestic division of labour.

[Table 1 about here]

Total Housework

Tables 2a and 2b present the results OLS regression of women's and men's total housework time. In Models 1 and 2, we add the share of family income and work hours to the equations to test the hypotheses concerning time availability and resource bargaining. After controlling for total family income and other characteristics, the share of contribution in family income is negatively associated with

housework hours in both women's and men's models. These findings show support to **H1** and **H2**. That is to say, housework hours of women and men are determined by their working hours as well as the level of economic income relative to their partners.

[Tables 2a and 2b about here]

Turning to Models 3 and 4, we add the square of the share of income to test if there are any gender display effects. If there is any such effect, we should see a curvilinear relationship between the share of income and housework time. In other words, the coefficient of the squared term of share of income will be significant but in an opposite direction with the coefficient of the share of income. The results show that income squared is significant only in the case of rural women and rural men. However, as illustrated in Figure 1, the relationship between housework hours and relative income is convex for both rural men and rural women. Therefore, we have found some supportive evidence for **H3** for rural but not urban couples. However, the association is somewhat different from what we have expected for rural men. We see that from Figure 1 that rural men's housework time ceases to decline when their income share reaches over 70%. Rural women spend much longer time on housework when they earn a significantly higher proportion of family income (>80%). Hence **H4** about rural and urban difference is partly supported: we see evidence of gender display in the case of rural women but not urban women.

Routine Domestic Work

Tables 3a and 3b provide results of OLS regression of the share of routine domestic work. Relative income is negatively associated with the share of routine domestic work across the models for both men and women, even when working hours and other factors are

taken into account. For both urban and rural women, as shown in Models 2 and 4, their routine housework intensity is also negatively associated with their work hours. For both urban and rural men, however, their participation in routine domestic work is not associated significantly with work hours. In other words, the reason why they undertake these tasks less frequently than women is not time constraints. Overall we have found supportive findings to **H1** about time availability for women but not for men. We have found supportive findings to **H2** about resource bargaining for all men and women.

[Tables 3a and 3b about here]

Turning to Models 3 and 4, we see that the coefficient of the squared term of share of income is significant for both rural and urban women. However, it is significant in the case of rural men but not urban men. As shown in Figure 2, routine housework participation forms a convex relationship with the share of income for both rural men and rural women. The relationship is mostly linear except for rural men and women who contribute the major share (>50%) of family income. Nevertheless, rural men participate infrequently in routine housework in all relative income levels. For urban women, the relationship between relative income and routine housework is curvilinear when women earn significantly less than their partners (<20%) but there is also a high variance in routine housework time among women with a very low income share. Therefore we have found supportive evidence for **H3** about gender display in the case of rural women. The findings also support **H4** about rural and urban differences. The gender display effect is found only in rural couples but not urban ones. For urban couples, gender disparity in routine housework participation is less significant and the resource bargaining approach provides better predictions of their participation than the gender display theory.

Non-routine Domestic Work

Turning to Tables 4a and 4b, which present results of OLS models of the share of non-routine domestic work. Non-routine domestic work such as home-repairs can be flexibly arranged over the week or even a longer period and is less likely to be bound by time constraints during the day. It is therefore not surprising to find that working time is insignificant in all of the models for men and women. In women's models, relative income has a curvilinear relationship with non-routine domestic work. However, for both rural and urban women, relative income is insignificant when the squared term is omitted, indicating it is not a good predictor of their contribution in non-routine housework. In men's models, relative income is insignificant in both rural and urban cases. No curvilinear relationship is found. The pattern of associations can be seen in Figure 3. Furthermore, in both rural and urban couples, men undertake much more non-routine domestic work than women.

[Tables 4a and 4b about here]

In sum, in the case of non-routine domestic work, there is no supportive evidence for **H1** about time availability or **H2** about bargaining based on relative resources for both men and women. A convex relationship between relative income and non-routine domestic work is found for women. However, the findings overall do not support **H3** about gender display by housework because relative income itself is a poor predictor of non-routine domestic work. Furthermore, there is no supportive evidence for **H3** regarding gender display for rural men and urban men. We have found no supportive evidence for **H4** about urban and rural differences either.

Care work

The OLS models of the share of care work are presented in Tables 5a and 5b. This category of domestic work includes caring for adults and children. For rural women, their share of care work is much increased when they have children. For urban women, having more than one child does not increase the intensity of care work compared with having only one child (the coefficients concerning having no child are negative but not significant), but the intensity is significantly increased when urban women have more than one child. Turning to variables of theoretical interest, working time is negatively associated with rural women's but not urban women's intensity of care work. The proportion of income forms a linear rather relationship with urban women's intensity of care work but a curvilinear relationship rural women's intensity. However, the coefficients of income share are insignificant in urban women's models when the quadric term is not included, indicating that relative resources are not good predictors for care work.

[Tables 5a and 5b about here]

For rural men, their intensity of care work is also significantly higher when they have children.⁷ For urban men, however, their intensity of care work is not associated significantly with the presence of children. Turning to variables related to time availability and relative resources, working time is negatively associated with care work intensity for both urban and rural men. However, the coefficients are close to zero and slightly positive in the case of urban men. The proportion of family income forms a curvilinear relationship with both rural and urban men's care work. Referring to Figure 4, we can see that the relationship is more curvilinear in the case of rural men, mainly because men with higher income share (>50%) spend more rather than less time on care work. In sum, working time and proportion of income have more complex associations with men's and women's share of care work than routine and non-routine types of domestic work. Time availability, relative resources and gender display are not strong explanatory frameworks

for analysing care work participation. **H1** on time availability is supported mainly by the case of urban women. There is some evidence to support **H2** about resource bargaining in the case of rural women. **H3** on gender display is supported only by the findings of urban women and rural men (See Figure 4). As for **H4**, there are differences between rural and urban areas. But the main differences are determined by the presence and number of children.

Summary and Conclusion

This article contributes to the literature of the domestic division of labour by analysing different types of domestic work in modern China. In sum, we have found supportive findings for all the four hypotheses about time availability, relative resource bargaining, gender display and urban and rural difference in gender display (**H1 - H4**). As can be seen in Table 1 and Figures 1 to 4, there is also gender segregation in domestic work (**H5**). Women undertaken the major share of routine domestic work and care work. Men undertake a lion's share of non-routine domestic work.

Furthermore, the findings generally support **H6a - H6c** that working time and relative income form different patterns of association with different types of domestic work. Concurring with **H6a**, the associations of routine housework for men and women broadly follow the predictions of the resource bargaining approach and the time availability theory. However, these approaches do not offer good prediction in men's and women's non-routine housework. Non-routine domestic work do not need to be performed on a daily basis and can be flexibly fitted with one's work schedule. Hence it is less influenced by time constraint factors than routine housework. Moreover, this type of domestic work is less associated with gender ideology and femininity. The findings also support

H6b: the gender display effect is more likely to be observed in routine housework than non-routine housework. It is shown that there is a gender display effect in rural women's routine housework but not in their non-routine housework. Finally, we have found some supportive evidence for **H6c**. Relative income and working time are associated to a certain extent with men's and women's care work participation, but the associations do not comply fully with the hypotheses about time availability and relative resources. Care work participation can only be partly explained by relative resources and time availability factors, e.g. in the case of urban women.

Overall speaking, the findings suggest that the domestic division of labour is influenced by both the gendered nature and flexibility of the type of domestic work. Non-routine domestic work such as home-repairs do not need to be undertaken daily and can be flexibly arranged over the week. It is therefore less constrained by the time and resource factors. This type of domestic work may be considered to be gender neutral or even "men's housework", as men have a greater share of it than women. In other words, men and women are more likely to bargain over or display their gender identities through time-constrained and feminine types of housework. Care work, coupled with gender ideologies, as well as to parenting and child rearing, has more complex patterns of association with relative resources and working time. This suggests that not only gender ideologies but also other forms of ideologies may interact with the process of resource bargaining over the domestic division of labour.

Furthermore, the gender display effect in total housework time and routine housework is found only in rural couples but not in urban couples. As couples in rural areas are more likely to hold traditional gender values (Hu and Scott 2016). These findings also suggest that gender norms and ideology play a significant role in determining housework participation.

Taken together, all these findings suggest that bargaining through economic resources in terms of relative income and working time is an effective means to achieve a gender egalitarian division of domestic labour. However, this depends on the gender ideology of the region, the gendered nature of the type of domestic work, whether the type of domestic work needs to be performed on a daily basis, and whether other forms of ideologies other than the gender ideology may interfere in the process.

This study has limitations. First, the current data source measures participation in different domestic tasks by the degree of sharing between spouses rather than the exact minutes or hours that respondents spent on these tasks. The measurements do not include all types of routine, non-routine house work and care work. To examine bargaining and gender segregation in domestic labour more thoroughly, we will need measurements of the time spent on each of the all types of domestic tasks. Second, this study has focussed on testing the resource-based approach theories and the gender display theory. It is found that gender ideology is still a barrier to gender equality in domestic division of labour. Further research can be conducted to explore circumstances under which the influence of gender ideology may be lessened or reinforced.

Notes

1. The figures are calculated from a sample of the China Population Census data.
2. The figures are calculated from data of the 2005 China 0.1 per cent population mini-census.
3. The survey did not collect information about the spouses' work status. We assume that the spouse is employed if he or she has income.

4. The number of cases of women and that of men are different because individuals rather than households were randomly sampled in the survey. The survey originally has 29,693 observations in total. As the target population in this research are 18-54 married individuals who lived in the independent house (do not live with extended family), and were employed at the time of survey, this results in 11,027 observations. By further employing list-wise deletion, 8,730 observations entered our analysis. We discovered that the 2,297 missing observations were due to missing values associated with coal/gas purchasing, it is because in 2010, coal are less often used except in some remote rural areas. Households nowadays mostly rely on pipe-line (natural) gas which associate with less manual work. The exclusion of this variable when constructing non-routine housework intensity would increase the analytical sample size from 8,730 to 10,054 obs. We do the analysis based on these two samples (N=8,730; N=10,054), yielding the similar findings. The results based on 10,054 sample size are taken as robustness check, which are not shown in the text, but available upon request.
5. Past research has shown that there are reporting errors in the stylised questionnaire estimates of housework time (Kan, 2008b; Robinson, 2000). While stylised estimates on participation in domestic labour are not ideal when compared to more accurate time-diary estimates, the reporting errors are largely random rather than systematic (Kan and Pudney, 2008). When stylised time use estimates are taken as the dependent variables in a regression model, standard error of the coefficients of some independent variables might be underestimated but the effect is not substantive (Kan and Pudney, 2008).

6. In the questionnaire, the respondent was asked, “how much is total income of your spouse?” To be consistent, when calculating the respondent’s income, we sum up all types to of income of the respondent in this analysis including earned income, portfolio income, passive income and subsidies of all kind.
7. We further test the robustness of our findings by prefecture level fixed effects models. In our preliminary analyses, we put the family total income rather than both partners’ individual income as independent variables. We also run models where educational attainment dummies are omitted from the list of covariates to see if our conclusions will be changed. Results of the additional models can be made available upon request.

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