

# The Gender Game of Parenting Responsibilities: A Study on the Decision-making Model of Women's Participation in the Workplace

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## **Abstract:**

Despite the increasing educational attainment of women and the overall rise in female labor force participation, it remains common for women to withdraw from the labor market during marriage and childbearing. After giving birth, women face the choice of whether to return to the labor market or to take care of their children full-time. This choice is often attributed to the subjective will of the women themselves or the division of labor within the family, with less consideration given to the role of institutional factors, gender roles, and the negotiation mechanisms within the family. This section, based on a game theory perspective, assumes that both spouses are completely rational and establishes a simple two-person non-cooperative game model to explore the impact of the division of child-rearing responsibilities on women's labor market participation. The results show that, in the absence of government intervention measures, there will be an equilibrium solution within the family where the wife withdraws from the labor market and the husband takes on less child-rearing tasks. However, with the implementation of public policies such as parental leave, allowances, or flexible employment, the game outcome may change, leading to a more equal division of child-rearing responsibilities and facilitating women's re-employment. This paper argues that women's withdrawal from work is not a completely autonomous choice but rather a result based on the established institutional environment and the distribution of decision-making power within the family.

**Keywords:** Child-rearing responsibility sharing; Women's employment; Family decision-making; Gender equality

## 1. Research Background and Problem

The traditional family concept holds that women are the mothers and the main caregivers of children, while men are the breadwinners. However, with social development and increased educational attainment, more and more women have entered universities and joined the workforce, with their own career plans. In reality, childbirth remains a significant milestone in women's careers. Many women reduce their working hours or even completely withdraw from the labor market after having children, a phenomenon that is common in many countries.

This situation is often simply attributed to "voluntary choice" or "women naturally love children," suggesting that they choose to quit their jobs to take care of their children. However, if we delve deeper, we will realize that in the absence of adequate childcare support, an unfriendly work environment, and a lack of active participation from husbands in child-rearing, the cost for women to continue working actually increases. Under such circumstances, "leaving work" becomes a "seemingly reasonable choice."

## 2. Literature Review and Theoretical Foundation

In the field of family economics, the allocation of parenting responsibilities and labor division have long been important topics. Becker's theory of household division of labor holds that family members will divide labor based on comparative advantage to maximize the overall utility of the family. However, this theory often assumes that the family is a unified decision-making entity and pays little attention to the power structure and conflicts within the family.

In recent years, many studies have used game analysis methods, treating each family member as a rational person with their own preferences and strategies, and have reached some new conclusions: for instance, even if "sharing parenting responsibilities" is mutually beneficial for both spouses, the family may still fall into an inefficient equilibrium state without a communication mechanism. Some scholars have also found through empirical research that the income and career development losses brought to women by childbirth are persistent, while men tend to progress steadily along a certain track, which in turn reinforces traditional division of labor. Domestic research has also paid attention to phenomena such as "single-parent parenting" and "mother's punishment", pointing out that insufficient institutional support and gender norms play significant roles. However, overall, studies that systematically analyze the decision-making mechanism of family parenting using formal models are still limited. This paper

hopes to provide an intuitive explanation for the above phenomena through a simplified game model.

## 3. Game Model Setup and Real-World Weight Calibration

### 1. Participants and Strategy Sets

In this paper, the husband and wife in a family are regarded as two rational decision-making entities, and a static non-cooperative game framework is adopted for analysis.

-Participants: Wife (W) and Husband (H);

-The wife's strategy set: continue to participate in the workplace (W) or withdraw from the workplace and take care of children full-time (H).

-The husband's strategy set: actively participating in child-rearing (C) or less/ no participation in child-rearing (N).

When making strategy choices, both husband and wife will comprehensively consider factors such as income changes, time cost, psychological pressure, career development and family welfare. For the sake of formalized analysis, this paper integrates the above factors into a utility function by weighting.

### 2. Income Structure and Realistic Logic Constraints

To avoid the problem of "the score matrix being logically consistent but detached from reality", the following realistic constraint principles are introduced in the model setting of this paper:

a. The total income of families with joint parenting should be higher than that of single-party sacrifice. That is, in the vast majority of real situations, the comprehensive family welfare brought by both husband and wife sharing the responsibility of parenting (W, C) should be higher than the structure of "wife quitting the job and husband not participating in parenting" (H, N).

b. Women's exit from the workplace has long-term hidden costs, including the depreciation of human capital, the decline in future income and the reduction in career stability.

c. Men's participation in parenting requires certain costs, but these costs can be alleviated through relevant systems, such as parental leave, flexible working hours, and the improvement of social recognition.

These restrictions are based on a large amount of real data and research results. For instance, studies in OECD countries have found that in countries where men have a high rate of participation in child-rearing (such as the

Nordic countries), the female labor force participation rate and the overall family happiness are relatively high. Families where only one gender takes on the responsibility of child-rearing do not demonstrate higher long-term efficiency.

### 3. Setting of the Payment Matrix and Explanation of Weights

Based on this, the following benefit matrix is constructed in this paper:

Table 1

	Husband: Participate in child-rearing C	Husband: Do not participate in child-rearing N
Wife: Work W	(4 , 4)	(1 , 5)
Wife: Exit H	(2 , 3)	(2 , 4)

In the brackets, the first number represents the wife’s utility, and the second number represents the husband’s utility.

- In the (W, C) situation, both husband and wife share the responsibility of child-rearing, the wife remains employed, and the husband bears some of the child-rearing costs, but the overall family welfare is the highest (4 + 4 = 8).

- In the (W, N) situation, the wife faces the dual pressure of “workplace + child-rearing”, and her utility significantly decreases, while the husband gains short-term utility by avoiding the responsibility of child-rearing.

- In the (H, N) situation, the wife takes on the main responsibility of child-rearing and exits the workplace, the husband’s utility is still higher than the wife’s, but the total family utility is lower than that of the structure where both parents participate in child-rearing.

- In the (H, C) situation, although the wife exits the workplace, the husband’s participation in child-rearing eases the family pressure to some extent, but there is still the long-term loss of the woman’s career interruption.

### 4. Equilibrium Analysis and Structural Dilemma

Without external institutional intervention, although (W, C) is superior in terms of the total household income, due to inconsistent individual incentives, the game may still fall into a non-optimal equilibrium.

Specifically, for the husband, when expecting the wife to continue working, choosing not to participate in child-rearing yields a higher income (5 > 4);

For the wife, when expecting the husband not to participate in child-rearing, quitting the workplace is a relatively rational choice (2 > 1).

Therefore, (H, N) constitutes a Nash equilibrium: any unilateral change in strategy by either party would lead to a decrease in their own utility. This result explains the widespread phenomenon in reality of “women leaving the workplace - men’s absence in child-rearing”.

However, this equilibrium is not socially optimal but a

stable yet inefficient structural equilibrium.

In the absence of policy intervention, the model shows that the family is prone to enter a stable equilibrium: the wife chooses to quit the workplace, and the husband chooses to participate less in child-rearing. In this state, although the overall household utility is not the highest, any unilateral change in strategy by either party would worsen their own situation, thus both lack the motivation to change.

This outcome is very common in reality. For example, if the wife insists on continuing to work but does not receive sufficient family support, she will instead bear higher pressure; while the husband does not directly suffer in the current division of labor, thus also lacks the motivation to change proactively. This equilibrium does not imply fairness or efficiency, but merely “stability”.

### 5. Survey Data Support and Model Parameter Calibration

#### 1. Questionnaire Design and Sample Overview

The survey was conducted online, and a total of 90 valid responses were obtained, covering people of all ages and marital statuses. Among them, women accounted for over 60%, men for about 30%, and some respondents preferred not to disclose their gender. Although the sample size was relatively small, it still reflected the general attitude of the public towards the division of child-rearing responsibilities.

#### 2. Main Findings of the Survey Results

Overall, the majority of respondents strongly agreed that “co-parenting can bring more happiness to the family”, and the scores were relatively high across both genders. This indicates that, subjectively, respondents believe that co-parenting is a better family form that benefits the fami-

ly, rather than an additional burden.

Regarding specific parenting responsibilities, women's average agreement with "willingness to spend time on parenting" was slightly higher than that of men; for "nighttime parenting", men's agreement was significantly lower, but they did not show a completely rejecting attitude. This suggests that there is no phenomenon of men being unwilling to parent, but the degree of participation depends on institutional design and opportunity costs.

### 3. Correspondence between Survey Results and Game Model

The above survey results provided a small amount of real-world basis for the numerical references in the game model of this paper. Firstly, the general acceptance of co-parenting by respondents supports the basic assumption in the model that "the total utility of the family in the co-parenting situation is higher than that of unilateral sacrifice". Secondly, men are not completely lacking in parenting willingness, but their participation in high-cost tasks is relatively low, which is consistent with the model's setting that "there is a cost to the husband's participation in parenting that can be reduced by policy".

Therefore, the setting of (W, C) as the strategy combination with the highest total family benefit in the model is not a judgment based on rational norms, but is consistent with the direction of social preferences reflected in the survey. The failure of the game to achieve this result is not due to a lack of efficiency, but because the individual incentive structure is not aligned with the overall social benefit.

### 6. Policy Variables and Equilibrium Changes

To analyze the impact of institutional factors, this paper introduces policy variables into the model, such as paid parental leave for men, childcare subsidies, and flexible working hours. These measures can reduce the cost of the husband's participation in parenting or the marginal cost of the wife continuing to work.

The model results show that when the above policy support is strong enough, the original equilibrium may be disrupted, and the new equilibrium will shift to "the wife continues to work and the husband participates in parenting". In this situation, the parenting responsibilities within the family are more balanced, and women do not have to exit the workplace to maintain family stability.

This analysis indicates that the division of parenting responsibilities is not solely determined by personal prefer-

ences but is highly dependent on institutional design. Only by changing the rules can the outcome be changed.

## 7. Discussion and Implications

From the perspective of game theory, women's withdrawal from the workplace is not a reflection of their own preferences, but rather a rational and reluctant choice under the given social structure. This implies that merely calling on women to "work harder" or men to "be more self-aware" is not sufficient to solve the problem. The key lies in whether there are institutional conditions that facilitate cooperation.

## 8. Conclusion

This paper constructs a simplified family game model and analyzes the relationship between the sharing of parenting responsibilities and women's participation in the workplace. The research shows that in the absence of external support, families tend to fall into a stable but unfavorable division of labor for women; while reasonable systems can help change the game structure, making a fairer division of labor possible.

Therefore, whether women "choose" to leave the workplace should not be understood merely as an individual decision, but rather should be placed within the overall framework of family games and social systems for understanding. Only when the game rules are fairer can individuals have true choice rights.

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