

Analysis on Relationship Between the Number of Children and Working Hour of Chinese Entrepreneurs: The Mediating Effect of Efficiency

Jiacheng Huang

Bentley University, Waltham, MA, 02478, U.S.
Email: Huang_jiac@bentley.edu

ABSTRACT

Working at home is pervasive during Covid-19. Children, as an indispensable part of the family, influence the working of parents. Therefore, this paper was conducted to investigate the influence of the number of children on the Chinese entrepreneurs' working hours when working at home with the mediator of efficiency. The data was collected through a questionnaire with 149 valid samples and analyzed with regression and Bootstrap. The result shows that the number of children will increase the Chinese entrepreneurs' working hours working at home with the mediator of efficiency. In detail, the result shows that there's a negative relationship between the number of children at home and the entrepreneurs' working hours ($\beta=0.662$, $p<0.01$); and efficiency is the mediator between the relationship of the number of children and the working hours.

Keywords: *Working hours, mediation effect, the number of children, working efficiency, COVID-19*

1. INTRODUCTION

Working overtime is usual in East Asia [1]. Especially in China, where 51.37% of the employees working overtime (more than 41 hours per week), and 31.7% of the employees work more than 48 hours per week [2]. Entrepreneurs who face higher stress than the employees [3] experience the overtime issue more: the unit head worked 47.5 hours per week in 2018 [2].

Because of COVID-19 and the lockdown policy in China [11], many Chinese entrepreneurs worked from home. Working from home was beneficial to increase work performance and working satisfaction [4]. In the context of the pandemic, however, working from home seems to be more challenging because of "children, space, privacy and choice" [5]. There's no previous research investigating the relationship between working hours and the number of children at home, so this paper is trying to fill this gap.

This paper focuses on the influence of the number of children on the working behavior of Chinese entrepreneurs, namely, their working time, when they worked at home during COVID-19. The research questions are as follows: 1) Will the number of children influence the Chinese entrepreneurs' working hours when they worked at home during this pandemic? 2) How will the number of children influence the working time? Besides, the work efficiency is introduced as the mediator to further

discuss the question. This research will help to predict the working habit of entrepreneurs when working at home during this pandemic, providing some insights for future researches.

1.1. Hypothesis

Children, as one of the most important parts of most families [6], are a "home-time-intensive activity," [7] which make parents spend lots of time on them. Working from home provides parents with more flexibility and stronger control on timing [8], enables them to schedule work hours when children are at school [9]. The transferring to online education [10] and the draconian lockdown policy [11] in China during Covid-19, however, may decrease the flexibility of Chinese parents to work during the school time of the children, since the kids were taking online courses at home where the parents work. The loss of flexibility makes the parents more likely to mix their work and non-work activities [12], and thus leads to the extending of working hours because of the interruptions during work [13]. Also, the number of children has a positive correlation with parents' time spent on "child-related activities" [14], which may further influence the working time of parents. Entrepreneur-parents belong to a special segment of the parents: they usually have more flexible time

arrangement but more pressure from work at the same time.

As COVID-19 leads to millions of Chinese entrepreneurs to work from home for the first time, this paper tries to investigate the relationship of the number of children and the entrepreneurs' working hours with efficiency as the mediator based on COVID-19 scenario. Two hypotheses will be tested in this paper:

Hypotheses 1: the number of children will increase Chinese entrepreneurs' working time during COVID-19.

Hypotheses 2: efficiency is the mediator between the relationship between the number of children and the entrepreneurs' working hours.

1.2. Method and Settings of the Questionnaire

1.2.1. Framework of mediation

Mediation model is used to reveal how the third variable (mediator) influence the relationship between independent and dependent variables [15]. While this paper has proposed a direct link between the number of children and the Chinese entrepreneurs' working time during COVID-19, one more proximal outcome to working hours may be efficiency. This variable, as the mediator, may help to explain the process of how the number of children influences the Chinese entrepreneurs' working time during COVID-19.

Working from home provides people with flexible boundaries [16], and mixes their work with the family issue by being interrupted during work time [13], which finally increases stress [17]. The increased stress reduces productivity (efficiency) [18] and thus increasing the work time. Thus, this paper predicts efficiency helps explain the relationship between the number of children and the entrepreneurs' working hours.

Means and standard deviations were among the study variables reported in the descriptive statistics (Table 1). Hierarchical multiple regression is used in this paper to test the hypotheses, predicting values of variables and "identifying the strength of the relationship between the variables. [19]" A Bootstrap analysis developed by Preacher and Hayes [20] was used to further test the mediation effect of efficiency.

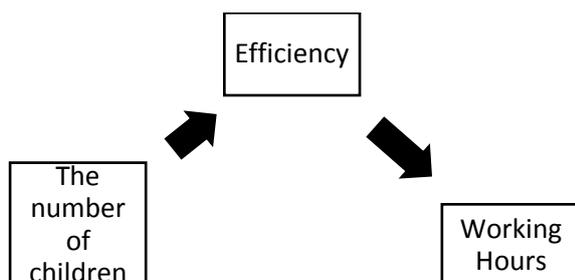


Figure 1: The Mediation Framework

1.2.2. Data Collection

To research the influence of the number of children on the Chinese entrepreneurs' working time, I used the quantitative analysis in this paper, since the quantitative analysis can best measure and rank the motivation and outcome of the Chinese entrepreneurs. A six-question survey was composed to collect data. The questionnaire was distributed and collected from the Chinese entrepreneurs on Credamo (Creator of Data and Mode), a Chinese online survey platform. The participants were ensured that the result collected would be accessed only by researchers.

1.2.3. Participants

269 completed surveys were collected. 41 participants answered that they are not entrepreneurs and were removed from the data set since they do not belong to the research group of this study. Another 79 were removed from the data for never working from home. The final sample consisted of 149 participants.

1.3. Measures

1.3.1. The Number of Children

The number of children was reported by the participants by a filling gap question "how many children at home do you have."

1.3.2. Working Hours

The working hours were measured by a filling gap question "how many hours do you work per day during COVID-19."

1.3.3. Efficiency

The working efficiency is measured by multiple-choice questions "how do you think your productivity was with the influence of children at home" with three response options: 1=low, 2=medium, 3=high.

1.3.4. Control Variables

The control variables - gender, age and company size - were also included in the analysis. Gender was dummy coded: female= 0 and male = 1. Age was assigned based on an ordinal scale with six response options: 1= 18-20, 2=21-30, 31-40, 41-50, 51-60 and more than 60 years old. The company size was also assigned with numerical digits, micro-enterprises being 1, small-enterprises being 2, medium-enterprises being 3, large- enterprises being 4.

1.4. Results

The result of descriptive statistics was shown in table1. The participants' average time working time from home of the participants during COVID-19 is 7.8 hours per day, with a maximum of 16 hours and a minimum of 2 hours.

Table 1: Survey: Descriptive statistics

Variable	Obs	Mean	S.D.	Min	Max
Working hours	149	7.815	2.322	2	16
The number of children at home	149	1.376	0.818	0	3
Working efficiency	149	2.081	0.740	1	3

Figure 2 shows the demographics of the participants. 64% of the respondents were male. The age of the participants ranges from 20 to 50. 54% of the participants run a small size company with 10 to 50 employees. Hierarchical multiple regression was used to test the hypotheses (see Table 2). Gender, age and company size were entered at Step 1, the number of children at home was added at Step 2; and the mediator variables were entered at Step 3.

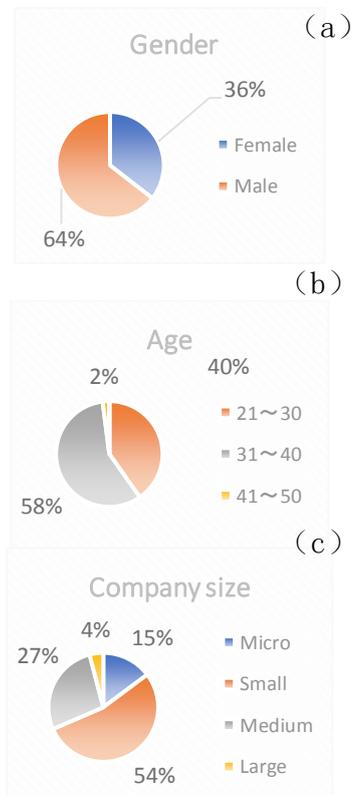


Figure 2 Distribution control variables

Table 2: Mediator regression results with working hours as dependent variable

Independent variables	Step 1	Step 2	Step 3
Constant	8.502***	8.097***	10.969***
Gender	0.206	0.118	-0.102
Age	-0.691	-0.755**	-0.906***
Company size	0.448	0.32	0.268
The number of children at home		0.662***	0.507**
Efficiency			-0.965***
R2	0.04	0.093	0.179
Adjust R2	0.021	0.067	0.151
F	2.039	3.677**	6.253***

*pb<.05. **pb<.01. ***pb<.001.

The F value in step 1 is 2.039 without significance. This shows that the control variables do not influence the entrepreneurs' working time. The F value in the second step is 3.677 with 0.05 significance. This shows that the number of children influences the entrepreneurs' working time. The result from step two shows that the number of children explains a significant increment in the variance associated with the working time of the entrepreneurs ($\beta=0.662$, $p<0.01$) at home during COVID-19, beyond that of the control variables. Specifically, entrepreneurs with more children have a longer working time when working at home during COVID-19. This result supported hypothesis 1: the number of children will increase Chinese entrepreneurs' working time during COVID-19.

The F value in step three is 6.253 with 0.01 significance, which is bigger and more significant than the F value in step two. This shows that with the consideration of efficiency, the number of children and influence the entrepreneurs' working time more. The results from step 3 show that efficiency mediated the relationship between the number of children and Chinese entrepreneurs' working hours based on the criteria of Baron and Kenny [21]. After placing the mediator in the regression equation, the relationship between the number of children and Chinese entrepreneurs' working hours e became less significant ($\beta=0.507$, $p<0.05$), beyond that of the control variables. Thus, hypothesis 2 is supported: the efficiency is the mediator between the relationship between the number of children and the entrepreneurs' working hours.

To further test the mediation effect of efficiency on the relationship between the number of children and Chinese entrepreneurs' average working time, the bootstrap analysis developed by Preacher and Hayes [20] was used. Table 3 shows the result of Bootstrap analysis with the sample size 5000. The 95%

confidence intervals do not include zero (95% CI:0.04~0.338). The mediation effect of efficiency is 0.166.

BootLLCI refers to the lower limit of the bootstrap 95% CI and BootULCI refers to the upper limit of the bootstrap 95% CI.

Table 3: Bootstrap Analysis

Variable	Effect	Boot SE	BootLLCI	BootULCI
The number of children at home → Efficiency→ Working hours	0.166	0.075	0.04	0.338

Bootstrap sample size=5000.

1.5. Findings and Discussion

There are three main findings of this paper. First, the Chinese entrepreneurs’ average working time was 7.8 hours per day during COVID-19, which is 1.7 hours less than the unit head’s working hours (9.5 hours per day) per day from National Bureau of Statistics of China [2]. The possible reason might be that many entrepreneurs were not able to get the same workload as normal because the many industries shut down during COVID-19.

Second, according to the research, entrepreneurs having more children have longer working time. This finding is consistent with that of Hill, Ferris and Mårtinson [13] that children prolong the parents’ working hours and provides the initial support to our agreement that the number of children may prolong their working times.

Third, it is notable that this paper demonstrates that the number of children affects their entrepreneurs’ working hours at home through the mediator – working efficiency, further providing evidence with the importance of efficiency for the entrepreneurs working at home. The possible reason is that though entrepreneur-parents do not stop working when their children disturb them, they still get distracted and thus reduce the working efficiency, which indirectly increases the working hours.

2. CONCLUSION

This study aims to investigate the notion that the number of children influences Chinese entrepreneurs’ working hours. It is supposed that the number of children could be influential in examining and thus predicting the entrepreneurs working hours when working in the future. Overall, the results generally support the hypotheses: 1) the regression result helps that the number of children will increase Chinese entrepreneurs’ working time during COVID-19; 2) the regression result and the Bootstrap Analysis support that the efficiency works as the mediator between the relationship of the number of children and the entrepreneurs’ working hours. There are some limitations to this research. The sample was collected online; therefore, the entrepreneurs who do not use the Internet a lot, such as the elder entrepreneurs, may be ignored. Also, the measure of working efficiency is based on the participant’s evaluation, which may be biased based on their personal trait. Moreover, the measurement of efficiency only has three levels; thus, the result cannot be calculated to find out how

much the entrepreneurs’ working time is affected since the participants tend to choose the middle one.

For future studies, it may be helpful to research on the children, parents’ working hours and efficiency. The further can be expanded to how the age and personal trait influence the parents’ working time.

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