The Attenuating Effect of Internet Use on the Inhibiting Factors of Female Labor Force Participation: Evidence from the Philippines

Emily Christi A. Cabegin

Abstract. This paper examines the association between women's internet use and labor force participation and how internet use modifies the inhibiting effect of pregnancy, the presence of young children, religious restrictions, and strong patriarchal beliefs on women's engagement in the labor market. The study findings show the moderating effect of internet use on the severity of the negative effect of strong patriarchal values, religious constraints, and the presence of young children on female labor force participation. are less severe among women with high internet use than those with low internet use. High internet use does not significantly modify the negative association between pregnancy and labor force participation.

1. Introduction

Filipino women are better educated than men but are penalized in the labor market due to motherhood or traditional stereotyped norms ascribing productive roles to men and reproductive roles to women. While the Philippines has achieved gender parity or reversal in educational attainment, it faces a wide gender gap in labor force participation at 21 percentage points in 2023. In the 2024 global gender gap index, the Philippines ranked 1st of 146 countries in educational attainment and 98th in labor force participation rate (World Economic Forum, 2024).

2. Theoretical perspectives

Write-up here.

3. Data and methods

3.1 Data

The data used in this study were drawn from the 2022 Philippine Demographic Health Survey (DHS) which collects information from a nationally representative sample of women in the reproductive ages between 15 and 49 years old on reproductive-related variables such as fertility and pregnancy, and demographic socioeconomic characteristics such as household wealth, education and economic activity. Data is obtained on the couple's household decision-making, for currently married or cohabiting women. The 2022 Philippine DHS has a total sample of 27,829 women.

3.2 The probit model of labor force participation

The study uses the probit model to estimate the probability of female employment as follows:

$$Prob[y_i = 1] = \emptyset(\beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_{12} x_1 x_2 + \beta_{13} x_1 x_3 + \beta_{14} x_1 x_4 + \beta_{15} x_1 x_5 + V\gamma) \quad [1]$$

where y is the binary employment outcome taking a value of 1 if the woman is employed and zero otherwise, Φ is the standard normal cumulative distribution, x1 is a dummy variable for daily internet use, x_2, x_3, x_4, and x_5 are the variables to be interacted with internet using which are respectively, pregnancy status, presence of young children, religion and patriarchy index. V is a vector of additional independent variables and covariates (age, place of residence, educational attainment, household wealth index).

The strength of patriarchal values is constructed as a composite index based on four questions on who usually decides (e.g., mainly the respondent's husband/partner, or the respondent and husband/partner jointly) on the following:

- how the respondent's husband's/partner's earnings will be used
- major household purchases
- visits to respondent's family or relatives
- respondent's health care

The probit model is estimated separately for all women and currently married or cohabiting women. The probit model for currently married women includes an additional variable of patriarchy index.

4. Empirical Analysis

4.1 Descriptive statistics

Table 1 presents the descriptive statistics of the dependent and independent variables used in the probit model estimated separately for all women (n=27,281) and currently married or cohabiting women (n=15,218). Employment rates are lower for the all-women sample at 42% compared to 55% for currently married women, possibly due to more single and younger women staying longer in school and obtaining more education. As expected, currently married women are more likely to be pregnant, and have a larger family size with very young children. Compared to the all-women sample, currently married women are older on average (36 years old vs. 30 years old) and are less educated (e.g. the percent with less than secondary education was 12 percent for all women and 18 percent for the currently married sample). Currently married are less likely to be residing in urban areas and are less better off (e.g. 30 percent of currently married are in the two richest wealth quintiles compared to 35 percent for all women).

Table 1: Descriptive Statistics

Variable	All women (N= 27,281)	Currently married or cohabiting women (N=15,218)
Employment status	100%	100%
Employed	42.4	50.6
Not employed	57.6	49.4
Education		
Primary education and below	11.8	17.7
Incomplete secondary education	28.0	18.4
Complete secondary education	24.0	28.6
College education and above	36.2	35.4
Marital status		
Never in union	41.0	
Currently married/cohabiting	55.8	100.0
Separated/annulled/widowed	3.2	
Pregnancy status		
Pregnant	3.2	5.6
Not pregnant	96.8	94.4
Presence of young kids		
Yes	17.7	26.7
No	82.3	73.3
Religion		
Christian, non-Catholic	12.6	13.2
Roman Catholic	69.0	69.8
Muslim	10.8	11.3
Others	7.6	5.8
Patriarchy Index		
Quartile 1		30.8
Quartile 2		22.3
Quartile 3		34.9
Quartile 4		12.0
Daily internet use		
Yes	57.4	46.7
No	42.6	53.3
Place of residence		
Rural	60.1	61.5
Urban	39.9	38.5
Wealth index		
Poorest	24.1	28.4
Poor	21.8	22.9

Middle	18.6	18.3
Richer	17.6	15.4
Richest	17.8	15.1
Continuous variables		
Age	30.1	35.5
Number of children still living	1.6	2.6

Cohabiting or currently married women are less likely to use the internet (daily) at a 47% usage rate compared to 57% for all women. Religious affiliation does not seem to vary between the two samples with 70% Roman Catholics, 13% other Christians, and 11% Muslims. Based on the composite patriarchy index, about 31% percent of currently married women are in households with weaker patriarchal beliefs (e.g. lowest quartile of the patriarchy index) and 12% are in households with the strongest patriarchal values.

4.2 Estimates of the probit model

4.2.1 The penalty for pregnancy and motherhood

Regardless of education and other demographics, Filipino women suffer a penalty in the labor market by becoming a mother or pregnant. Pregnancy reduces women's employment by as much as 12% and the presence of young children by as much as 17% (Table 2). The qualitative transcripts from Focus Group Discussions (FGD) with Human Resource managers in Cabegin and Gaddi (2019) indicate employer discrimination in hiring pregnant women or those with very young children:

> "In my industry, we have a silent rule. If the applicant is pregnant you have to find a way to say "no" to the applicant. We do not ask a direct question 'Are you pregnant?', but we ask them a set of questions that would identify their pregnancy status. For example, we ask them if they are willing to undergo a complete physical and medical examination. Pregnant women will not undergo an X-ray examination. We cannot reject an applicant because she is pregnant. What we tell her is that an X-ray examination is part of the requirement for selection."

> "A pregnant woman needs to have some regular or emergency medical check-up. This is a management cost and a risk, as clients would require a certain manpower headcount in each day. Pregnant women are considered a liability because they go on sick leave."

> "When a pregnant woman gives birth, she takes a maternity leave. And if this is her first childbirth, then she is expected to apply for an extended leave to take care of the baby. We waited for her to return to work after her maternity leave, and she comes back only to tender her resignation….to take care of the baby. So, this is back to square one for the recruitment process."

> "When a recruiter hires a pregnant woman who later goes on leave or resigns from work, the recruiter is penalized by a lower performance rating which is the basis for a future salary raise."

Table 2: Average marginal effects on employment status

Variable	All women sample		Currently married sample	
	δY/δX	s.e.	δY/δX	s.e.
Age	0.023***	0.001	0.007***	0.001
Single	0.020***	0.012		
Urban	0.015***	0.007	-0.031***	0.009
Wealth Index (ref: Poorest)				
Poor	0.025***	0.010	0.063**	0.012
Middle	0.051**	0.011	0.099**	0.014
Richer	0.067**	0.012	0.133**	0.016
Richest	0.084**	0.013	0.179**	0.017
Education (ref: below secondary)				
Incomplete secondary	0.011***	0.013	0.010**	0.015
Complete secondary	0.032***	0.012	0.026**	0.014
Tertiary and above	0.110***	0.013	0.124**	0.015
Number of children still living	-0.006***	0.004	0.008***	0.004
Daily internet use	0.047***	0.008	0.034***	0.010
Presence of young kids	-0.127***	0.010	-0.167**	0.011
Pregnant	-0.096**	0.020	-0.109**	0.020
Religion (ref: Other Christian)				
Catholic	-0.017***	0.010	-0.027**	0.012
Muslim	-0.202**	0.015	-0.187**	0.019
Others	-0.056**	0.016	-0.058**	0.021
Patriarchy index (ref: Quartile 1)				
Quartile 2			-0.023**	0.012
Quartile 3			-0.074***	0.010
Quartile 4			-0.086**	0.014
Interaction effect				
Presence of young kids*	-0.143**	0.011	-0.180**	0.013
Low internet use	-0.074**	0.011	-0.123**	0.014
High internet use				
Pregnant *				
Low internet use	-0.079**	0.022	-0.089**	0.026
High internet use	-0.077**	0.021	-0.110**	0.025
Patriarchy index (ref: Quartile 1)				
Catholic				
Low internet use	-0.042**	0.012	-0.039**	0.015
High internet use	0.005	0.0101	-0.008**	0.018
Muslim				
Low internet use	-0.198**	0.015	-0.196**	0.019
High internet use	-0.140**	0.017	-0.140**	0.031

Other religion	-0.085**	0.020	-0.081**	0.025
Low internet use	-0.019**	0.018	-0.020**	0.029
High internet use				
Patriarchy index (ref: Quartile 1)				
Quartile 2				
Low internet use			-0.027**	0.015
High internet use			-0.015**	0.015
Quartile 3				
Low internet use			-0.069**	0.013
High internet use			-0.066**	0.014
Quartile 4				
Low internet use			-0.091**	0.017
High internet use			-0.064**	0.020

***Significant at .01 level; ** Significant at .05 level

Stereotyped gender roles ascribing to women the functions of home and child care and to men the responsibility of income provider for the household significantly explain the lower labor force participation of women with very young children. Qualitative transcripts from key informant interviews and focus group discussions in Cabegin and Gaddi (2019) support this view:

> "There is a prevailing mindset that the head of the family should be the breadwinner. If the man is not broad-minded, he demands that his wife stay home to care for the children as he works to provide for the family."
>
> "I used to earn a lot as a manager in a company. The nature of my work then was sales, so I traveled often. Eventually, I was offered a position that would double my salary. The higher we go up, the less time we have for our families. I felt guilty often. I chose my family over my work when my husband told me I needed to give time to myself and my family. Women who work at the top in the corporate world are more likely to be in a broken family or single."
>
> "I believe it is my role as a mother to care for my children. I also felt a sense of guilt because our eldest son preferred to sleep with the nanny because I needed to go to work early in the morning when he is still asleep and I go home so late at night when he is already asleep. And the guilt has become so strong that this also affected my concentration at work so eventually I resigned from my work."
>
> "Women who are working are likely to take a leave from work to take care of the children. The husbands are not hands-on with childrearing. If our spouses or children are sick, we take a leave from work to care for them. If we are sick, nobody takes care of us and we sometimes still go to work. It is unfair. My women employees take a leave from work if there is a family-related problem".

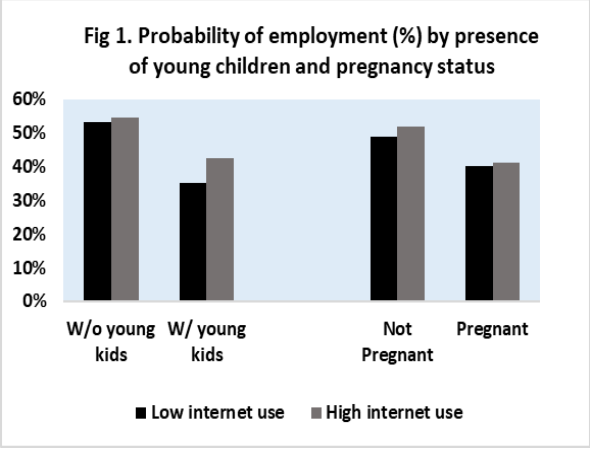
4.2.2 The constraints of religious restrictions and patriarchal beliefs

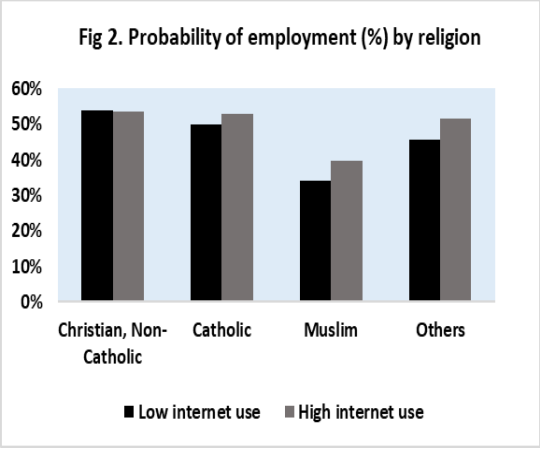
Non-Catholic Christians are the most likely to be employed and Muslim women are the least likely. Compared to non-Catholic Christians, Muslim women have a 20 percentage points lower labor force participation rate. This is explained by the religious restrictions Islam imposes on women's entry to employment (Cabegin & Gaddi, 2019, p. 48-49): (a) Muslim women are subordinated to their husbands who decide on whether the wife works; (b) Muslim husbands are expected to provide for the financial needs of their families as their wives are expected to care for them and their children; (c) Muslim women should wear a hijab (i.e., veil that covers a woman's head, hair, and chest) in the presence of unrelated males; (d) Muslim women find it hard to work in the arts and entertainment industry as it is haram (i.e., prohibited) for women to sing or dance that may lead to *fitna* (i.e., enticement and temptation of men). Islam forbids the display of a woman's voice in public such as singing which may be alluring to men. Dancing and fashion modeling intended to entertain the public is likewise haram.

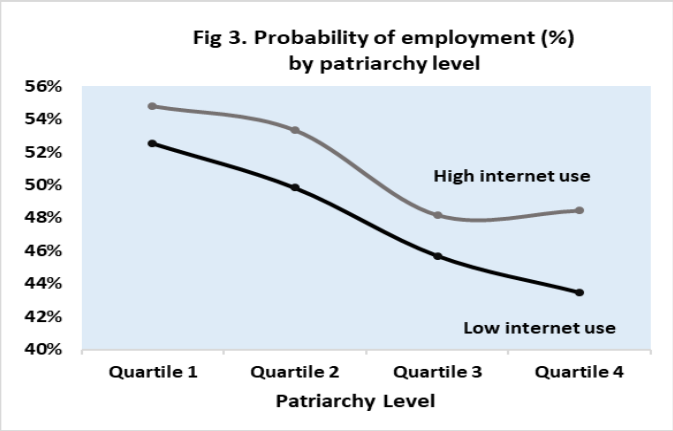
Strong patriarchal beliefs significantly reduce the labor force participation of women by as much as 9 percentage points.

4.2.3 The moderating effect of internet use on the negative association between motherhood and patriarchal values on labor force participation

Daily internet use is associated with higher labor force participation rates by 3 percentage points for currently married women and 5 percentage points for all women. Internet use significantly reduces the negative effects of the presence of young children, Islamic religious restrictions on women's work, and strong patriarchal values (Figures 1 to 3).







References

World Economic Forum. (2023). Global gender gap 2024. Switzerland: WEF. Retrieved from https://www3.weforum.org/docs/WEF_GGGR_2024.pdf