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The Determinants of the Underemployment Gender Gap in the Philippines: A Decomposition Analysis

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Underemployment is a prevalent labor market issue around the globe. It reflects how an individual can be employed but is unable to work to their desired number of hours, receive sufficient wages, or fully utilize their skills, leaving them in precarious working conditions. Studies on underemployment and its gendered impact in the Philippines remains limited with most labor studies primarily addressing wage and unemployment. This study addresses this gap by identifying the factors contributing to underemployment and gender-based inequalities in the Philippines. Using quarterly data from the Labor Force Survey from 2012 to 2021, we distinguished between visible and invisible underemployment based on the number of hours worked per week. To analyze the determinants of these two forms of underemployment, we employed a probit model with Heckman's two-step sample correction that considers workers' individual, organizational, and social characteristics. We then executed an Oaxaca-Blinder decomposition to estimate the visible and invisible underemployment gender gap and its component. We found that men have a higher probability of visible and invisible underemployment compared to women primarily because of endowments in education and occupational choice, although there is evidence men are rewarded more in the labor market than women. One policy recommendation is to improve upskilling, reskilling, and education programs for workers, especially for highly vulnerable demographics such as less-educated rural male workers.

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Policy Recommendations

1. Upskilling, Reskilling, and educational programs for workers.

Policies that aim to upskill or reskill workers to skills that are currently demanded in the labor force are crucial in equipping demographics that are likely to be underemployed. Similarly, educational programs that equip workers with opportunities to increase their skillsets are crucial in improving the employment outcomes of vulnerable workers likely to be underemployed. Our study shows the extent to which education plays a role in determining the likelihood of underemployment of workers. Education is one of the most significant determinants relative to other worker characteristics. The heckprobit estimation and the oaxaca blinder decomposition proves that endowment in education plays a significant role in driving the underemployment gender gap.

2. Targeting demographics that are disadvantaged

The study emphasizes demographics that are more likely to be underemployed relative to their counterparts. In general, men are more likely to be underemployed compared to women. This happens because women have better endowments in education in comparison to men as evidenced in the oaxaca-blinder decomposition analysis. This necessitates labor policies to target these demographics that are disadvantaged for maximum impact in helping the most in need. Furthermore, the gap between groups is not only gender but cuts across other worker characteristics too such as the areas and occupations the workers are in. Rural and non-NCR workers are more likely to be underemployed relative to their urban and NCR counterparts. Agriculture and craft-related occupations are more likely to be underemployed. The researchers map out the state of underemployed workers with the study for policymakers to target their legislation better to those who need it the most.

3. Passing the SOGIE Bill

The study shows evidence of discrimination between men and women in the labor force. Although men are more likely to be underemployed, the returns of education are higher for men than they are compared to women. In gist, women are rewarded less compared to men for the same characteristics. Such finding is captured by the negative coefficient result under the Oaxaca decomposition, which indicates that women would be less visibly underemployed if they obtained the same returns as men. Likewise, this could be evidence of discrimination in the workplace, which is again supported by the Oaxaca-Blinder decomposition with the significance of the interaction effect that accounts for the remaining difference attributed to factors other than those related to labor market-based differences. As such, the researchers necessitate the passing of the SOGIE Bill that protects workers from gender discrimination in the workplace. The study serves as evidence of discrimination and inequality between genders which is crucial to convince lawmakers of the need for such legislation.

4. Child-care Policies

The study provides evidence of women participating less in the labor force and a higher likelihood of being underemployed when they have dependents on their household. As evidenced by the Oaxaca-Blinder decomposition, the endowment value of household members is negative, which means that women's underemployment would decrease if they had the characteristics of men in a family setting. As such, the researchers recommend the passing and improvement of child-care policies that capacitate women the time and resources to participate in the labor force to a larger extent that they currently can.

5. Improving safety nets and resiliency during crisis

The study shows how the COVID-19 pandemic has altered the labor force. Crucially, it increased the number of individuals that are underemployed especially men who were disproportionately affected by the crisis relative to their counterpart of women. Hence, policies that send out safety

nets to the most affected demographics are recommended to target these disadvantaged groups for maximum policy impact. Furthermore, the study serves as a justification of a more resilient economy that can operate even during a crisis through digital infrastructure to lessen the propensity of workers getting laid off or given less hours of work.

Introduction

Underemployment remains a persistent issue in labor markets worldwide, reflecting an inferior quality of employment relative to a defined standard such as employment rates or one's own education or work history (Feldman, 1996). The Philippines uses the time-related definition, where in the Philippine Statistics Authority (PSA) further distinguishes between the visibly underemployed and the invisibly underemployed. Visibly underemployed are those who work less than 40 hours per week but want to have longer working hours or an additional job. Those invisibly underemployed are those working 40 hours or more per week but still want an additional job (Philippine Statistics Authority [PSA], 2017). The study evaluates the probability of underemployment status given an individual's endowments or characteristics. Additionally, the study measures the gender-based inequalities in visible and invisible underemployment in the Philippines and identifies the main contributing factors to this gap.

Model Specification and Results

Using the quarterly Labor Force Survey waves from 2012 to 2021, the study implements a two-step Heckman probit model for labor force participation. This filters out selection bias that may occur from the probability of being underemployed that is conditional on the choice or ability to join the labor market by explicitly accounting for the latter. After which, the Bauer and Sinning extension (2008) of the Oaxaca-Blinder decomposition originally described by Blinder (1973) and Oaxaca (1973) to examine the underemployment gap between male and female workers was conducted. The Oaxaca-Blinder decomposition is a method for determining the factors contributing to the mean difference in outcomes between two groups, which are men and women in this study.

Robustness checks are conducted to ensure the validity of the results. The AIC and BIC criterion were computed, which provide information on the goodness-of-fit of the models. The


AIC and BIC criterion were computed for both probit models, with or without selection equations. Bootstrapping was also conducted as a method for resampling the data, wherein 1000 replications were conducted. This allowed us to estimate measures of uncertainty, the confidence intervals, to check the validity of our results. A smaller confidence interval would indicate a more robust result. Lastly, to correct selection bias, we use the Inverse Mills Ratio, the ratio between the standard normal probability distribution function and standard normal cumulative distribution function. The resulting ratio is added to the model as an explanatory variable. Since the models for the visible and invisible underemployment are run separately, the ratio will also be computed separately and added to their respective models.

The results from the two-step Heckman Probit Regression highlights that female workers are more likely to be fully employed but also more prone to visible underemployment compared to men. On the other hand, women are less likely to experience invisible underemployment. Educational attainment plays a crucial role in determining labor outcomes, with higher levels of education associated with lower underemployment probabilities.

The analysis of the Oaxaca-Blinder decomposition demonstrates that women are significantly more likely to be fully employed than men, with the gap mainly driven by disparities in endowments, coefficients, and interactions. In the case of visible and invisible underemployment, men are slightly more susceptible, with endowment effects, influenced by occupation, education, and nature of employment, accounting for a significant portion of the gender gap. However, the interaction effect is statistically insignificant for both visible and invisible underemployment, suggesting that the overall gender gap is not significantly attributed to combined effects.

Conclusion

In conclusion, this study sheds light on the issue of underemployment in the Philippines, focusing on visible and invisible underemployment and its gender-based disparities. The findings highlight the significance of education, location, and occupation in determining underemployment probabilities. Men are generally more likely to be underemployed than women, but the study uncovers nuanced gender differences in the type of underemployment experienced.



The practical implications of this research suggest several policy measures to address underemployment in the Philippines. Implementing upskilling, reskilling, and education programs can equip workers with the necessary skills to improve their employment outcomes. Policymakers should target disadvantaged demographics, such as men and rural areas, to maximize the impact of interventions. Passing the SOGIE Bill and improving child-care policies can address gender discrimination and support women's labor force participation. Strengthening safety nets and ensuring digital infrastructure can enhance resilience during crises and protect vulnerable workers.

For future research, the study recommends exploring other forms of underemployment, such as job-skill and job-education mismatch, to gain a more comprehensive understanding of the labor market dynamics. Analyzing underemployment from the perspective of part-time versus full-time employment and incorporating a voluntary versus involuntary dimension can provide further insights. Moreover, integrating the probability of being employed as an additional selection model can account for potential biases in employment probabilities.

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