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GENDER ANALYSIS OF THE REOPENING AFTER COVID-19 LOCKDOWNS:

Evidence from Cambodia

ROTH VATHANA AND BENGHONG SIELA BOSSBA



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Gender Analysis of the Reopening after COVID-19 Lockdowns: Evidence from Cambodia

Roth Vathana and Benghong Siela Bossba



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Table of Contents

List of figures, tables and appendices.....	ii
Acknowledgements	iii
Acronyms and abbreviations	iv
Abstract	v
1. Introduction	1
2. Methodology.....	3
3. Data and data collection	6
4. Results	9
4.1. Descriptive	9
4.2. Empirical	14
5. Skills training and digital literacy.....	19
a) Skills training	19
b) Digital literacy	21
6. Discussion	22
7. Conclusion and policy suggestions.....	25
References.....	27

List of figures, tables and appendices

Figure 1: Monthly income earnings (US\$).....	10
Figure 2: Increased consumption (%) and remittances (US\$)	11
Figure 3: Changes in other outcomes (ratio).....	12
Figure 4: WHO-5 well-being score.....	13
Figure 5: Gender-disaggregated heterogeneity effects of reopening.....	18
Figure 6: Word cloud of training courses wanted by workers.....	20
Figure 7: Average score of perceived digital literacy and ICT skills, by gender and age group.....	21
Table 1: Gender-disaggregated impacts of reopening (1).....	16
Table 2: Gender-disaggregated impacts of reopening (2).....	17
Appendix A: Gender differences in characteristics	30
Appendix B: Self-reported increases in income earnings and hours worked (%)	31
Appendix C: Monthly salary (US\$).....	32
Appendix D: Word cloud of the support useful for the workers to upgrade their skills	33
Appendix E: Description of variables	34
Appendix F: Probability of leaving the sample	35
Appendix G: Sectoral employment change since June 2021	36

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Acronyms and abbreviations

DID	Difference-in-differences
FGD	Focused-Group Discussion
FinTech	Financial Technology
GFT	Garment, footwear, and travel goods
HFPS	High-Frequency Phone Survey
ICT	Information Communication Technology
IT	Information Technology
MFI	Microfinance Institution
NSPC	National Social Protection Council
QFF	Quantile Fixed Effects
SME	Small and Medium Enterprises
WHO	World Health Organisation

Abstract

We quantify the effects of reopening economic activities after the COVID-19 pandemic lockdown on the lives and livelihoods of the workers in the garment, footwear, and travel goods sector in Cambodia. We employ fixed-effects difference-in-differences and quantile regression analyses using a panel survey of 2,000 workers interviewed by phone in June 2021 and June 2022. The impacts are disaggregated by gender. We find that lives and livelihoods of female and male workers have improved since the reopening, albeit not out of the woods and to the pre-pandemic level. The reopening has had positive and significant effects on wage and non-wage earnings of the workers, and female respondents have benefited as much as their male counterparts. Household consumption and remittances have increased, whereas the incidence of food insecurity has lowered. While the COVID-19 infection rate has subsided and been less fatal, and the probability of another lockdown remains low, new challenges have emerged, particularly the rising price of oil and food. We suggest interventions that could help lessen the negative impacts.

1. Introduction

It has been approximately one year since a series of lockdowns and mobility restriction measures were imposed by the government. Such measures were implemented to curb the spread of the COVID-19 transmission, a public health crisis which has contributed to the economic hardships that the country, households, and individuals have endured. The negative effects have been far-reaching and multi-faceted affecting female, male, old and young alike. Women, nonetheless, were shown to have been affected disproportionately more than their male counterparts. The risk of job loss is often higher among women than men as they tend to over-represent in the sectors (garment and tourism) which have been hard hit by the pandemic (Gavaluyugova and Cunningham 2020). Most women operate micro, small and medium enterprises mainly in the informal economy which have also been negatively impacted (ERIA 2020; TAF 2021). Moreover, women were more likely to shoulder care burden than men during the lockdown (Deshpande 2021; Alon et al. 2020). Cambodia re-opened nationwide on November 1st, 2021, attributable to successful vaccination campaigns, preparedness in terms of COVID-19 treatments and medicines, increased experience and public awareness in dealing with the infection (Mom 2021). Although infections have subsided and have been less fatal even with the new variants, and the economy has reopened, economic activities have not returned to the pre-pandemic level, implying that downside risks remain.

The gradual recovery has been evident in the growth of gross domestic product, projected to increase by 4.5 percent year-on-year in 2022 and to trend back to 6.0 percent in 2023 and 2024 (World Bank 2022, p4)¹. Industrial outputs have been projected to grow by 8.6 percent—1.3 percent for agriculture. Services, mainly tourism and hospitality activities, a sector which was hit the hardest by the outbreak of COVID-19, has also been projected to recover, albeit at a slower pace (World Bank 2022). Activities in the garment, footwear, and travel goods (GFT) sector, the most important manufacturing sub-sector in terms of export values, has seen signs of recovery. In the second quarter of 2022, for instance, the sub-sector's exports reached US\$3.4 billion, accounting for 63.3 percent of the total export values and representing a 56.8 percent increase from the same quarter of 2021. The US and EU were the main export destinations of the garment, footwear, and travel goods, accounting for 44.9 and 25.4 percent of the total garment exports respectively. The data also shows increased investment in the sector, reaching US\$166.6 million in the first half of 2022 from US\$60 million in the same period of 2021 (MEF 2022).

The government has also been proactive in helping lessen the negative impacts on businesses and households since the start of the pandemic outbreak. At the

¹ The Asian Development Bank puts Cambodia's GDP growth projection at 5.3 percent in 2022 and 6.5 percent in 2023 (ADB 2022). In its press release of the Article IV, the International Monetary Fund also projects Cambodia's GDP growth at 5.0 percent in 2022 and 5.5 in 2023 (IMF 2022). These organisations attribute the growth to the reopening that facilitates both international and domestic market demands.

2 | Gender Analysis of the Reopening after COVID-19 Lockdowns: Evidence from Cambodia

household level, the “COVID-19 Cash Transfer Programme for the Poor and Vulnerable Households” is one flagship program providing more than half a billion US dollars in cash transfers to some 700,000 poor and vulnerable households. Tax incentives and deferrals have been provided to private businesses, particularly those which have been severely affected, to help them stay afloat during these difficult times². The government has also been active in crafting strategic frameworks and policies that could provide guidance and direction for post COVID-19 recovery. The “Strategic Framework and Programmes for Economic Recovery in the Context of Living with COVID-19 in a New Normal (2021-23)” and the “Roadmap for Recovery of Cambodia Tourism During and Post COVID-19” are examples of such policies.

In this study, we followed up in June 2022 with 2,000 female and male workers in the garment, footwear, and travel goods sector who were surveyed in June 2021 by phone. Our main objective with the follow-up survey is to examine their lives and livelihoods which have been negatively impacted since the outbreak of the COVID-19 pandemic. The follow-up survey also gives us a unique opportunity to quantify economic, social, and psychological benefits they may have gained when the government decided to lift the lockdown and mobility restriction measures in November 2021 to facilitate economic recovery.

This study contributes to the literature on COVID-19 and the effects of reopening in three fronts. First, we leverage pre- and post-lockdown data to take advantage of temporal variations on outcomes and other socio-economic characteristics of the respondents, allowing us to control for observable and unobservable time-invariant factors. Second, the literature using panel data analyses of lockdown or reopening either in Cambodia or elsewhere is scant. The World Bank’s High-Frequency Phone Survey (HFPS) is an example of a collection of studies employing longitudinal data, but they investigate the impacts of the pandemic during lockdown periods—insufficient empirical analyses on reopening and its impacts³. Another relevant study is Lawreniuk, Brickell and McCarthy (2022). However, the authors examine the lives and livelihoods of the workers in the garment, footwear, and travel goods during the lockdown periods. Thus, it is of policy relevance to understand how the workers have benefited from the reopening and to assess whether further support is needed. Lastly, in this follow-up survey, we add two sections on skills training and digital literacy. The tabulated information is expected to contribute to the understanding of the types of skills that the workers want to have, methods through which training courses could be delivered, and how the government, employers and other stakeholders could help re-skill and up-skill the workers. It should

2 There have not been empirical studies, to the best of our knowledge, quantitatively investigating benefits of the government’s intervention programs on firms’ sales, productivity, and other outcomes. This could be a potential research area to inform policymakers and other stakeholders.

3 Refer to Karamba, Salcher and Tong (2021) for a study comparing results of Round 5 of HFPS with those of the previous four rounds to trace the evolution of key socio-economic indicators since the COVID-19 outbreak in Cambodia.

be noted that skills training is one of the main pillars under the Cambodia Garment, Footwear and Travel Goods Sector Development Strategy (2022-2027).

The report is organised as follows. Section 2 details econometric models used to measure possible impacts of the reopening on selected outcomes, disaggregated the differences between female and male respondents. Section 3 summarises how the follow-up surveys were conducted including procedures and challenges facing researchers and enumerators. Section 4 provides descriptive and empirical results of the impacts. It also presents gender-disaggregated heterogeneity effects of the reopening, examining distributional effects on female respondents at various levels of outcome distribution relative to their male peers. Section 5 examines skills training and digital literacy, whereas Section 6 discusses main findings. Section 7 concludes and suggests interventions.

2. Methodology

To examine the effects of reopening from COVID-19 lockdowns and mobility restriction measures on income, food and non-food consumption, remittances, and mental well-being, we employ a fixed-effects difference-in-differences (DID) regression approach leveraging pre- and post-lockdown data. We estimate differences of outcomes between female and male workers as the former group has been shown to be disproportionately and negatively affected by the pandemic in terms of income earnings and consumption. DID is a quasi-experimental design which has gained popularity in impact assessment and program evaluation (Wing, Simon and Bello-Gomez 2018; Angrist and Pischke 2009; Lee 2016; Donald and Lang 2007; Imbens and Wooldridge 2009; Blundell and Dias 2009). Most, if not all, of the studies we reviewed which assess the differential impacts of COVID-19 employ this approach (e.g., Amare et al. 2021; Hammond et al. 2022; Rudin-Rush et al. 2022; Vu et al. 2022).

We estimate the following fixed-effects regression, taking advantage of the temporal variations.

$$Y_{it} = \tau_p Post_i + \beta X_{it} + \zeta_j + \varepsilon_{it} \quad (1)$$

where Y_{it} is a set of outcomes of workers i at time t ; $Post$ is a binary variable, assuming a value of 1 for the 2022 data round; X_{it} is a vector of characteristics of workers i pre- and post-lockdown; ζ_j captures workers' fixed effects, characteristics which do not or vary little over the observed time periods, and other time-invariant unobservable factors; ε_{it} is an error term assumed to have zero conditional mean. τ_p is the parameter of interest to be estimated.

We modify Equation (1) to examine the differential impacts of the reopening on outcomes between female and male workers.

$$Y_{it} = \tau_p Post_i + \theta_{PG} Gender_i + \theta_{PG} (Post_i \times Gender_i) + \beta X_{it} + \zeta_j + \varepsilon_{it} \quad (2)$$

4 | Gender Analysis of the Reopening after COVID-19 Lockdowns: Evidence from Cambodia

where $Gender_i$ is a dummy variable taking a value of 1 for female workers and 0 otherwise. ζ_j captures workers' fixed effects, characteristics which do not or vary little over the observed time periods; ε_{it} is an error term assumed to have zero conditional mean. θ is the main parameter estimating the differences in outcomes between female and male workers because of the reopening.

The fixed-effect estimates could still be biased if ζ_j and ε_{it} include time-varying observable and unobservable characteristics of the workers. This is, nonetheless, unwarranted in our case for three reasons. First, characteristics of workers in the garment, footwear, travel goods sector are largely homogenous in terms of monthly salary (at least at rank-and-file level), education, skills, and family composition and background. This allows us to construct a reasonably good comparison both across time and gender and to satisfy a homogenous assumption of impacts among comparison groups. Appendix A presents gender differences in observed characteristics. Overall, although there are statistically significant differences between women and men, particularly on position held and salary earned, there are little or no statistically significant differences on individual characteristics and family composition/background. For instance, in 2022, men earned on average US\$42 (at US\$316) per month more than their women counterparts. The difference is attributable to higher basic salary (US\$20) and overtime pays (US\$16). Men also held more managerial and supervisory positions than women—34.0 percent of men compared to 12.0 percent of women. There are also salary differences at management/supervision level. That is, men earned US\$76 per month more than women. At the level of general workers, the difference is smaller and only significant at 10% confidence level. Second, the lockdown and mobility measures were imposed across the board regardless of the socio-economic and geographical background of the workers. This implies that the measure does not constitute selection bias among the examined sample. Lastly, one of the unobservable characteristics commonly postulated in empirical studies is entrepreneurial attributes of the examined sample, which is extremely hard to observe and measure. This is also unwarranted in our case given the large indifferences in education and skills of the surveyed workers.

In addition to the average effects, we investigate the distributional impacts of the reopening on selected outcomes. This is to determine whether the reopening may have affected workers or groups of workers with certain socio-economic characteristics more than others. For instance, workers at the 25 percentiles of the salary distribution might (or might not) benefit more than those who stay at the middle or higher salary distribution. Understanding these distributional effects could allow the government or stakeholders to target their policies or interventions to workers or groups of workers who should be assisted most. Specifically, we estimate the following quantile fixed effects (QFF) regression.

$$Y_{it(\tau)} = y_{\tau} Post_t + \beta X_{it} + \zeta_j + \varepsilon_{(\tau)it} \quad (3)$$

where $Y_{it(\tau)}$ is a set of outcomes by quantile; y_{τ} measures the effect of reopening on different quantiles of the examined outcomes; $\varepsilon_{(\tau)it}$ assumes zero conditional mean at each quantile.

For the sub-sample of female and male workers, the QFF is given as the following.

$$Y_{it(\tau)} = \tau_p Post_i + \sigma_{PG} Gender_i + \theta_{PG(\tau)} (Post_i \times Gender_i) + \beta X_{it} + \zeta_j + \varepsilon_{(\tau)it} \quad (4)$$

where $\theta_{PG(\tau)}$ estimates the differential effects of reopening on the different quantiles of examined outcomes between female and male workers. All regression estimations are implemented in Stata/MP 14.1. 'xtreg' is used to regress dependent variables on controls, and 'qreg' is for the quantile regression on continuous outcome variables⁴.

Sample attrition is common in panel data analyses, and that is no exception in the present study. Attrition rate (34.1 percent of the 2,000 observations) in our data is particularly significant compared to the usual standard of 10 percent or lower of the total sample⁵. It should be noted that we did not replace the dropouts for two reasons. Firstly, it is time-consuming to reach out to the replacement as their contact information (phone number) needs to be obtained and validated. In our sample, among the dropouts (682), 40.8 percent could not be reached because of wrong phone numbers, while 59.2 percent switched off their phones. Second, as highlighted previously, characteristics of the workers are largely homogenous, making attrition less of a concern if the number of missing observations is within an acceptable range and do not impact the sample size to the extent that statistical analyses cannot be sufficiently performed.

One of the concerns of attrition which could bias the estimates is the non-randomness of the missing observations. To examine this, we run a *probit* regression of the probability of leaving the sample on a range of individual, household, and geographic characteristics. The results (Appendix F) indicate that although there are a few characteristics which either negatively or positively affect the probability of leaving the sample, most effects are statistically insignificant. The dropouts, in addition, might leave the sample because of unobservable factors, differing from the respondents who stay; and the reasons for leaving might not be random. This is also unwarranted in our data as the characteristics of the surveyed workers are relatively homogenous, indicating that the sample is 'missing at random'⁶. For instance, the ratio of female and male respondents is roughly stable over the study periods – 0.80:0.20 in 2021 and 0.78:0.22 in 2022.

4 We do not perform the quantile regression estimates on binary outcome variables.

5 Attrition rate could vary depending on the context in which the survey is conducted, survey design and the target sample being interviewed. The range could be between 15 percent and 30 percent or more.

6 'Missing at random' and 'missing completely at random' can sometimes be used interchangeably. In our case, however, we divide the missing observations into (1) missing completely at random, (2) missing at random and (3) missing not at random. Thus, 'missing at random' sits between the first and third ones.

Attrition is often dealt with in panel data analyses to adjust for potential biases. One of the approaches is that sampling weights need to be re-calculated to account for the missing observations and to ensure that the sample remains representative of the sampling frame⁷. In this study, it was not possible to re-calculate weights as we have not been able to draw the sample by ourselves since the baseline survey. Although our aim was to design the sample to ensure randomness, officials at the Ministry of Labour and Vocational Training selected the sample on our behalf. Despite the issue, we do not perceive downward or upward bias in the estimates as characteristics of the sample respondents correspond to those in the population (e.g., proportion of female workers to the total workers in the sector). This result is reassuring in that the sample estimates could be generalised and do not present potential biases (Stantcheva 2022). In this vein, descriptive and inferential statistics are unweighted.

3. Data and data collection

In June 2022, a follow-up survey was conducted by phone with 2,000 workers in the garment, footwear, and travel goods sector in Phnom Penh and nine additional provinces in Cambodia. The workers were initially interviewed, also by phone, in June 2021. The survey took five weeks to complete, from June 18 to July 27, 2022. Almost all enumerators involved in the previous survey round were re-hired for data collection in the follow-up. They were trained for five days on the survey protocol and questionnaire. The questionnaire was pre-tested and revised based on the feedback. We also conducted three focused-group discussions (FGDs) with the workers to understand the situation—an all-male group, an all-female group, and a mixed group. Inputs from the FGDs were then incorporated into the questionnaire together with the results and lessons learnt from the baseline survey.

We reached out to the respondents using the phone numbers which were provided in the first round. As the sector is recovering from global supply and demand disruptions and the lockdowns and mobility restriction measures to curb the spread of the COVID-19 pandemic, it was challenging to find availability with the respondents to conduct the interviews. Most interviews were conducted outside of working hours and on the weekend—the most suitable timeslot for the respondents. We constructed panel data from the two survey rounds, allowing us to track changes during the examined periods. The balanced panel data contains 1,320 observations, resulting in an attrition rate of 34.1 percent of the total sample.

⁷ Refer to Wooldridge (2010) for approaches to address attrition bias and Moffitt, Fitzgerald, and Gottschalk (1999) for a discussion on inverse probability weighting (IPW). Karamba, Salcher and Tong (2021) also adjust weights according to the steps proposed by Himelein (2014) in their study using High-Frequency Phone Survey longitudinal data in Cambodia.

The questionnaire is designed using KoBo ToolBox and contains twelve sections. Sections on income, consumption, employment, food security, power relation, domestic violence, and well-being remain as they were in the previous survey. Nonetheless, the section on training, re-skilling and upskilling, and social protection were expanded to enable a more in-depth analysis of the skills development and the social protection scheme in the sector.

The respondents, who were employed at the time of survey, were asked to report their monthly salary earnings, comprising of basic, mostly equivalent to the minimum wage, and overtime pay and other benefits. The amount is a monthly average earned since June 2021. We included the 'Don't know' option in case the respondents did not want to disclose their salary earnings or could not provide the figure. Approximately 86.8 percent of the 1,320 surveyed respondents were employed—9.3 percent permanently terminated and 3.9 percent suspended. All employed respondents reported the monthly salary earnings. Nonetheless, 26 and 315 respondents reported 'Don't know' on their basic and overtime pays, respectively. We treated the 26 observations as missing, while computing the observations with missing figures on overtime pays and other benefits. That is, we subtracted basic salary from total salary. It should be noted that a question on position of the respondents was included in the 2022 survey to control for differences that might exist between female and male respondents. We also incorporated two questions tracking employment change and the sector to which they moved. These questions were not asked in the 2021 survey.

We asked the respondents to evaluate the status of household food and non-food consumption since June 2021 until the time of the follow-up survey in one of the three choices: increased, unchanged, or decreased. We then followed up on the percentage change if the answer is either increased or decreased to quantify the dynamics. We also included a 'Don't know' option. Four respondents did not provide the percentage change in food consumption when they reported an increase. We also asked the respondents to provide the reasons for the increased/decreased consumption during the reference period. On remittances to family members at hometown, three questions were included: since June 2021, how often have your family remitted? How much (on average) have your family remitted? And how much have you remitted? With the last two questions, we could separate the amounts remitted by the respondents and that by her/his family members (e.g., spouse or sons/daughters).

A range of questions were included to examine the non-salary outcomes of the economy reopening on the respondents. An important focus is the situation of food insecurity faced by the respondents and their family members. Specifically, a respondent was asked whether she/he or his/her family members had experienced a lack of food since June 2021. We then followed up on how the lack of food was dealt with; that is, members who volunteered to eat less and/or borrowing food

or asking for help. The respondents were also asked whether they or their family members have experienced financial difficulty since June 2021. We followed up on various strategies they might employ to address the issue.

Within the survey, we included two sections with questions examining respondents' experiences of domestic violence both at home and in the workplace, as well as the effects on their mental wellbeing. In relation to the former, domestic violence is defined as verbal and physical abuse which is often gender-based and skewed towards women, and therefore we hypothesise that violence may occur mostly on female respondents or their female household members. Examples of survey questions are: how often have you experienced conflict at home/the workplace since June 2021? Have you experienced any injuries due to domestic violence at home/the workplace? With regard to the latter, the respondents were asked to self-evaluate how they have felt about their life and livelihood over the past 2 weeks through a series of statements in which the requirement was to respond on a scale from 0 (at no time) to 5 (all of the time). The statements are as follows: (1) I have felt cheerful and in good spirits, (2) I have felt calm and relaxed, (3) I have felt active and vigorous, (4) I woke up feeling fresh and rested, and (5) my daily life has been filled with things that interest me. The raw score is the sum of the figures to the five questions and ranges between 0 (worst possible) and 25 (best possible quality of life). We converted the raw score to obtain a 0-100 index by multiplying the raw score by 4. Zero applies worst possible quality of life, while 100 applies best possible quality of life.

The last two sections, which were not included in the 2021 survey, contain questions on skills training and digital literacy. A range of questions were included to understand the workers' need for skills, behaviour toward skill acquisition and investment, opinions on types and modes of training courses wanted, and perceived support from the government and employers to encourage training participation. On digital literacy, three questions were asked—(1) possession of smart phone, (2) the use of smart phone applications, and (3) perceived level of digital literacy on a number of digital and ICT skills. Specifically, the respondents were asked to rate their knowledge on 11 digital and ICT skills on a scale from 0 (illiterate) to 10 (workforce level). The skills include: (1) browse, search and filter information on websites, (2) receive and respond to text messages on online platforms (e.g., messenger, Twitter, Instagram, LinkedIn, WhatsApp, Telegram, etc.), (3) use mobile banking applications to make transactions, (4) use mobile applications to browse and search for information, (5) share information and content on social media platforms or websites, (6) use Microsoft Word, (7) use Microsoft Excel, (8) use Microsoft PowerPoint, (9) use other computer software, (10) use email to communicate and collaborate, and (11) understand the basic laws and ethics applying to the use of digitalization and ICT.

4. Results

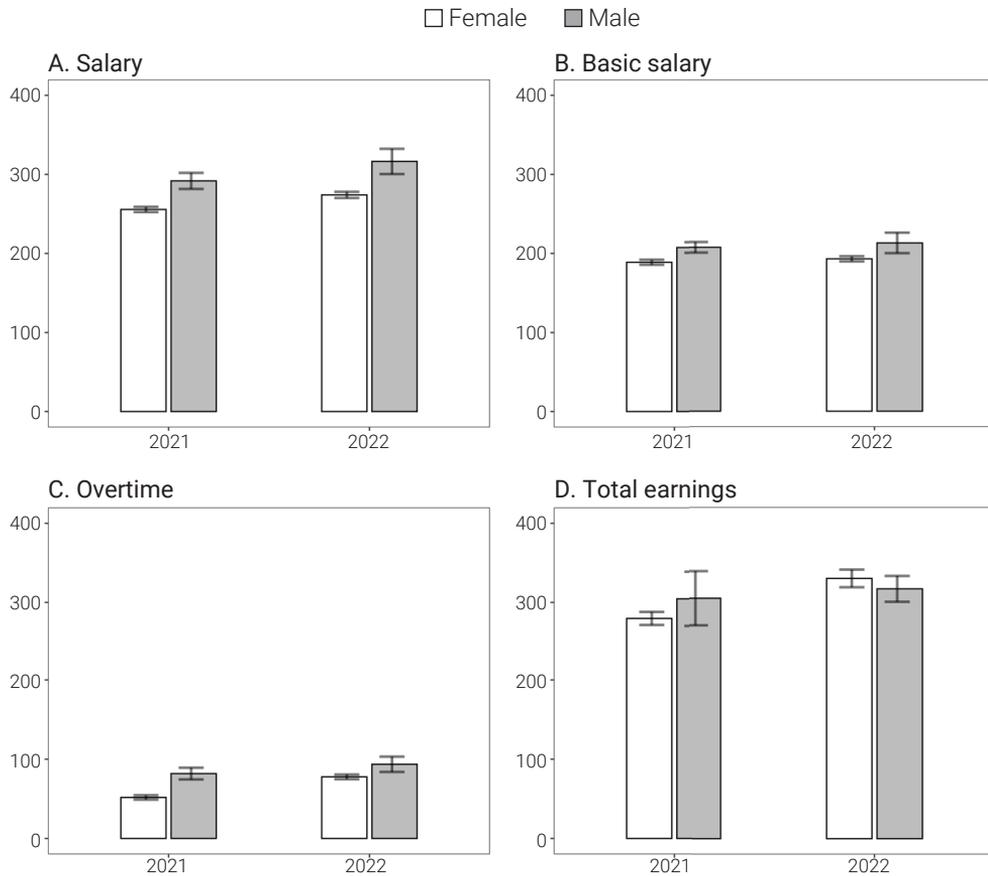
4.1. Descriptive

This section presents summary statistics of outcomes before and after the reopening, disaggregated by gender. Appendix E provides an explanation of the outcomes and control variables used in the descriptive and regression analyses.

Figure 1 highlights changes in monthly salary and total earnings (wages and non-wages) before and after the reopening and between female and male respondents. Salary remains the dominant source of income for the sampled workers, accounting for almost 90 percent of the total wage and non-wage earnings. Monthly salary increased by 7.6 percent on average from US\$264 in 2021 to US\$284 in 2022, regardless of gender. Male respondents reported an 8.2 percent rise in monthly salary (from US\$292 in 2021 to US\$316 in 2022) compared to 6.6 percent for their female counterparts (from US\$256 in 2021 to US\$274 in 2022). Respondents' basic salary has not changed significantly since the previous survey in 2021, even after controlling for differences in socio-economic characteristics of the sampled respondents (e.g., age, education, gender, position, and geographical location of the factory), averaging US\$193 (approximately the minimum wage) in 2021 and US\$198 in 2022. What has contributed to the overall increase in salary earnings is overtime work, and the rise in overtime pay is particularly significant for female respondents averaging 50.0 percent during the observed periods compared to just 10 percent reported by male workers. There has also been a slight increase in total earnings (Panel D) from salary and non-salary sources (e.g., income from farm activities; family businesses; properties, investments, savings; pensions and other social assistance).

The increased earnings have had a positive impact on remittances to family members at the hometown, albeit less frequent, and household consumption. It should be noted that 68.7 percent of the respondents reported an increase in food consumption in 2022 compared to 27.4 percent in 2021 during the outbreak of the pandemic. About 25.6 percent of the respondents (36.7 percent in 2021) said that their food consumption remains unchanged, whereas only 5.8 percent (25.9 percent in 2021) reported a decreased food consumption during the examined periods. Similar increases are observed for non-food consumption, having 74.5 percent of the respondents reported an increase in 2022 compared to 18.0 percent in 2021. The Chi-square tests show differences within and between years that are statistically significant at 1% confidence level.

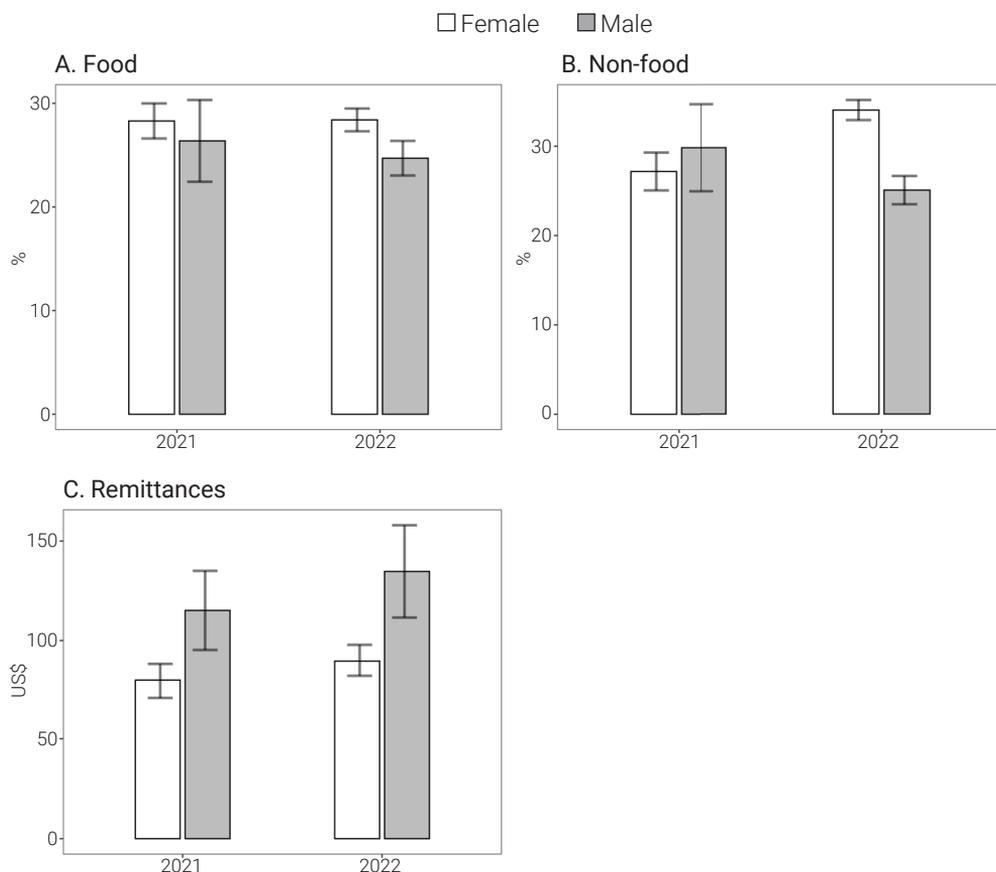
Figure 1: Monthly income earnings (US\$)



Note: The error bars indicate lower and upper bounds with 95% confidence interval.
 Source: Authors' calculations.

Figure 2 highlights changes in consumption and remittances before and after the reopening and between female and male respondents. Specifically, the increase in food consumption averaged 27.6 percent compared to 31.9 percent for non-food consumption. The descriptive results indicate that in 2022 female respondents reported a higher percentage increase in food (28.4:24.7) and non-food consumption (34.0:25.1) compared to that of their male counterparts. Remittances had also increased during the period, averaging 13.2 percent. Male respondents reported higher remitted amounts in 2022 at US\$135 compared to US\$90 by the female counterparts.

Figure 2: Increased consumption (%) and remittances (US\$)



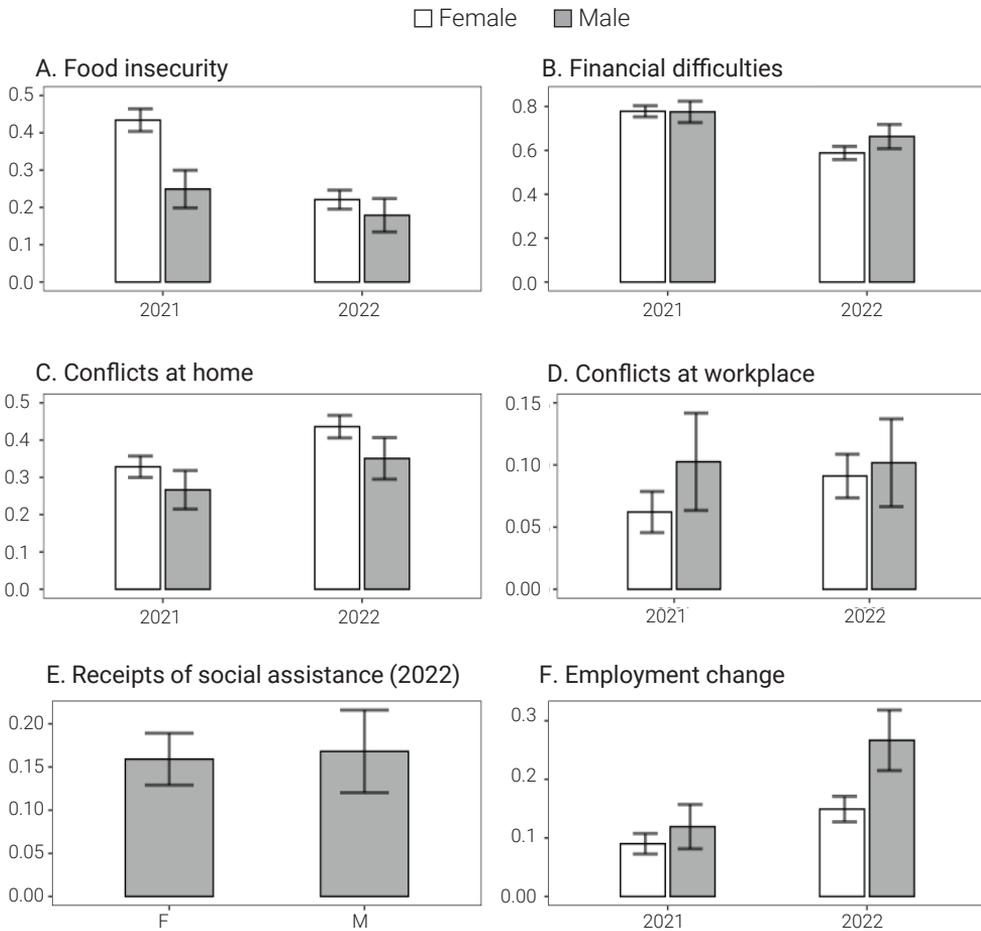
Note: The error bars indicate lower and upper bounds with 95% confidence interval. Source: Authors' calculations.

In addition, the reopening seems to have improved food security of the respondents and their family members as the incidence of experiencing a lack of food decreases post-lockdown. Specifically, 21.2 percent of the sample report experiencing lack of food after the re-opening compared to 39.4 percent prior (Panel A of Figure 3). Both female and male respondents report the decline. It is interesting to note that the incidence of conflicts at home and the workplace have risen during the observed periods, with female workers having reported experiencing such incidences more than their male counterparts. The conflicts at home and the workplace, however, are in the forms of minimal verbal arguments. Almost all respondents reported no experience of injuries due to the arguments⁸. The same applies to conflicts at the workplace (Panel C and Panel D). Some female participants in the FGDs raised concerns about arguments

⁸ It should be noted that we did not ask the types of arguments in the survey questionnaire. The indication is from the FGD results.

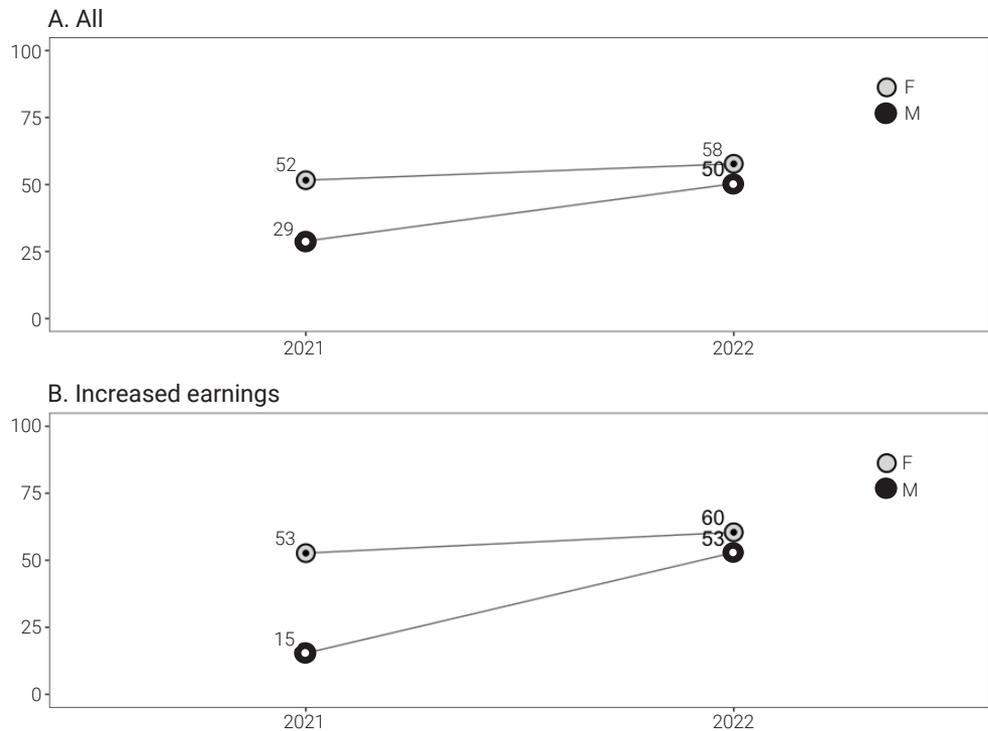
and a dissatisfaction that they had with their supervisor or team leader particularly in regard to their work arrangement. Receipts of social assistance post-lockdown also decreased. Approximately 2 out of 10 respondents report receiving social assistance, and there is almost no gender difference (Panel E). The descriptive results also indicate that there has been employment movement even though 86.5 percent of the sample report not changing jobs since 2021. Female respondents have a tendency to stay within the industry compared to their male peers (Panel F).

Figure 3: Changes in other outcomes (ratio)



Note: The error bars indicate lower and upper bounds with 95% confidence interval. F – female; M – male. Source: Authors' calculations.

Figure 4: WHO-5 well-being score



Note: F – female; M – male. Source: Authors' calculations.

The results also indicate an improved mental wellbeing, overall and by gender (Figure 4). The WHO-5 well-being score is calculated using direct responses to 5 questions – over the past 2 weeks...have you felt (1) cheerful and in good spirits, (2) calm and relaxed, (3) active and vigorous, (4) fresh and rested, and (5) been filled with things that interest you? It is a 6-point scale (0-5). The reported score on each question is summed and multiplied by 4. The total score ranges between 0 and 100. The overall score grew by 73.5 percent to 59 in 2022 from 34 in 2021. The increase is particularly high for male respondents compared to their female counterparts—29:50 versus 52:58. As shown, men were more pessimistic and stressed than women during COVID-19 and the subsequent lockdowns and mobility restriction measures. Worsened mental well-being of men, particularly those who experienced significant economic deterioration, is also evident in other studies. Economic deterioration and its repercussions through the weakened position of men as the family breadwinner may account for their affected well-being (Hadar-Shoval et al. 2022; Gottert et al. 2022). Similar factors might also be relevant to explain better well-being among men with increased earning in Panel B. The increase in well-being score among men relative to women workers after the reopening might be attributable to the fact that they now could be able to earn and socialise with friends and colleagues. The FGD results also indicate that male participants were more optimistic and happier with the reopening. One of them said 'now I can go back

to meeting friends and to enjoying a bottle of beer with them’.

Overall, the descriptive results indicate that the reopening after COVID-19 lockdowns has improved earnings, consumption, remittances, and other well-being indicators of the surveyed respondents, albeit not all have benefited; female workers have gained relatively more on certain outcomes than their male counterparts. The results, however, might be attributable to differences in socio-economic characteristics of the sample and/or other factors which vary across time and space, and are not observed or difficult to measure. To address the issue, we run fixed-effects difference-in-differences regressions to control for time-invariant observable and unobservable factors and the quantile regression to examine distributional effects. The regression results are presented in Section 4.2.

4.2. Empirical

a) Average effects

Table 1 presents fixed-effects regression estimates of the reopening on income, remittances, and the WHO-5 well-being score for all sample and subsample of the respondents who report increased earnings in the follow-up survey. The parameters of interest are ‘Reopening’ and ‘Reopening \times female’. The former measures the effects of reopening on the examined outcomes, whereas the latter quantifies the differences of outcomes between female and male workers due to the lifting of the lockdowns and other mobility restriction measures.

The reopening has had a positive and statistically significant effect on salary earnings increasing by 5.4 percent during the observed periods. Women benefited as much as men from the reopening. The increased salary is attributable to increases in basic salary (4.8 percent) and overtime pay (12.7 percent). The basic salary for female respondents rose 4.0 percent slower than that of their male counterparts. Nonetheless, there is a significant increase in overtime payment among female workers, averaging 23.4 percent more than that of male peers.

The increased salary earnings have had a positive and statistically significant effect on remittances, increasing on average by 28.1 percent pre- and post-lockdown. Female respondents sent as much money to dependents in their hometowns as their male counterparts. The results also indicate that the reopening has improved mental well-being of the surveyed respondents. However, female workers tend to be less optimistic about their lives and livelihoods than their male counterparts.

We further examine the impacts of reopening on a subsample of respondents who reported increased earnings in the follow-up survey round. The results show similar effects as those for the total sample. That is, salary earnings increase by 15.1 percent pre- and post-lockdown, attributable to both the rise in basic salary (6.1 percent) and

overtime pay (33.6 percent). The overtime is particularly significant among female respondents compared to their male peers. Total earnings and remittances increase by 17.0 and 40.5 percent, respectively. To measure mental and psychological well-being of the respondents, we adopt a well-being indicator proposed by the World Health Organisation (WHO) which is the composite index of a converted score of answers to five aspects of lives and livelihoods from cheerfulness to relaxation and to activeness. The raw score would then be converted to a range between 0 and 100. The results show that the surveyed respondents tend to be more optimistic about their lives and livelihoods after the lockdown. The WHO-5 score is particularly high among male respondents, showing signs of relief after almost a year of lockdowns and other mobility restriction measures.

Table 2 provides fixed-effects regression estimates on another set of dependent variables – food security, financial difficulties, conflicts at home and the workplace, receipt of social assistance, and employment mobility. The results are for all sample and subsamples with increased earnings in the follow-up survey. As indicated by the descriptive results, the reopening has had a statistically significant and positive effect on food security of the respondents and their household members. Specifically, the reported incidences of having a lack of food lowered by 7.7 percent pre- and post-lockdown, and female respondents report a 15.0 percent lower incidence of lack of food compared to their male counterparts. Conflicts at home had a tendency to increase during the examined periods; however, there is no gender difference in the reported conflicts. There has not been an increase in conflicts at the workplace. However, there is a slight increase in the reported conflicts by female respondents compared to their male peers.

The reopening has also had a positive impact on employment change, giving flexibility to workers to find jobs. Nonetheless, job mobility is less frequent and remains concentrated in the garment and a few other sectors. For instance, the descriptive results indicate that 82.5 percent of the sample respondents have not changed jobs since June 2021—85.1 percent for women and 73.3 percent for men. For the respondents who reported a change, the garment, footwear, and travel goods sector remains the most popular, followed by other manufacturing, construction, agriculture, and services (Appendix G). The results also show that female workers were less likely to change employment due to the reopening. The effect is statistically significant. This might imply that women workers tend to wait for reemployment with the same employer or move to a new garment factory. Women might also have limited options for work in other sectors, particularly construction, which are more suitable for men.

Table 1: Gender-disaggregated impacts of reopening (1)

	Salary earnings		Overtime	Total earnings	Remittances	WHO-5 well-being
	Total	Basic				
<i>All sample</i>						
Reopening	0.056*** (0.020)	0.047*** (0.011)	0.135*** (0.041)	0.032 (0.024)	0.260** (0.119)	0.498*** (0.031)
Reopening X female	0.021 (0.021)	-0.040*** (0.012)	0.200*** (0.050)	0.150*** (0.027)	0.040 (0.132)	-0.393*** (0.036)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
<i>Obs.</i>	2,197	2,102	1,959	2,557	634	2,591
<i>R-squared</i>	0.102	0.043	0.160	0.132	0.291	0.154
<i>Sample with increased earnings in the follow-up survey</i>						
Reopening	0.141*** (0.020)	0.059*** (0.023)	0.290*** (0.062)	0.157*** (0.023)	0.340* (0.195)	0.568*** (0.059)
Reopening X female	-0.010 (0.022)	-0.043* (0.023)	0.221*** (0.075)	0.105*** (0.031)	0.151*** (0.212)	-0.327*** (0.066)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
<i>Obs.</i>	849	807	772	901	262	887
<i>R-squared</i>	0.401	0.079	0.368	0.357	0.348	0.280

Note: All outcomes are in logarithmic forms to achieve a normal distribution and are in nominal terms. The estimates are in marginal effects. We adopt the approach by Halvorsen and Palmquist (1980) to interpret the semilogarithmic estimation results (i.e., logarithmic dependent variables and binary dependent variables). The formula is $\% \Delta \beta = (\beta^e - 1) \times 100$. Robust standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Authors' calculations.

Table 2: Gender-disaggregated impacts of reopening (2)

	Food insecurity	Financial difficulties	Conflicts at home	Conflicts at the workplace	Receipt of social assistance	Employment change
<i>All sample</i>						
Reopening	-0.074** (0.031)	-0.116*** (0.036)	0.077** (0.032)	-0.003 (0.024)	0.036 (0.027)	0.149*** (0.029)
Reopening X female	-0.140*** (0.035)	-0.075* (0.040)	0.025 (0.037)	0.045* (0.027)	-0.061* (0.032)	-0.090*** (0.032)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
<i>Obs.</i>	2,634	2,634	2,634	2,372	2,634	2,634
<i>R-squared</i>	0.116	0.092	0.044	0.014	0.004	0.040
Sample with increased earnings in the follow-up survey						
Reopening	-0.148*** (0.057)	-0.076 (0.067)	0.102* (0.058)	-0.037 (0.044)	0.013 (0.035)	0.083* (0.049)
Reopening X female	-0.181*** (0.065)	-0.258*** (0.073)	-0.002 (0.066)	0.100** (0.050)	0.005 (0.045)	-0.037 (0.053)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
<i>Obs.</i>	902	902	902	856	902	902
<i>R-squared</i>	0.237	0.239	0.077	0.027	0.003	0.020

Note: The estimates are in marginal effects. Robust standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Source: Authors' calculations.

b) Distributional effects

Figure 5 presents the fixed-effects quantile regression estimates of reopening on the continuous outcome variables disaggregated by gender. The purpose is to examine how female respondents at different levels of outcome distribution have gained from the reopening compared to similar groups of their male counterparts. The results indicate that all surveyed workers have benefited from the reopening regardless of their position on the salary distribution (i.e., low, middle, or high). In fact, workers whose salary is at the 25 percentiles of the distribution have gained relatively more than those whose salary is at the middle or 75 percentiles. As shown previously, the increase is attributable to the rise in overtime pay, and workers whose earnings are at the lower salary distribution work more overtime than those in the middle or upper levels of the distribution. The female respondents report a more pessimistic view on lives and livelihoods relative to their male counterparts. Several female participants in the FGDs were not so excited when asked their opinion of the reopening. They expressed the prevailing uncertainties in jobs, inflation, and economic prospects. They were also not as enthusiastic as their male peers on being able to attend social events and gatherings due to the reopening. This indicates that although the reopening has provided some hope, the recovery still presents economic challenges.

Figure 5: Gender-disaggregated heterogeneity effects of reopening



Note: All outcomes are in logarithmic forms. Source: Authors' calculations.

5. Skills training and digital literacy

a) Skills training

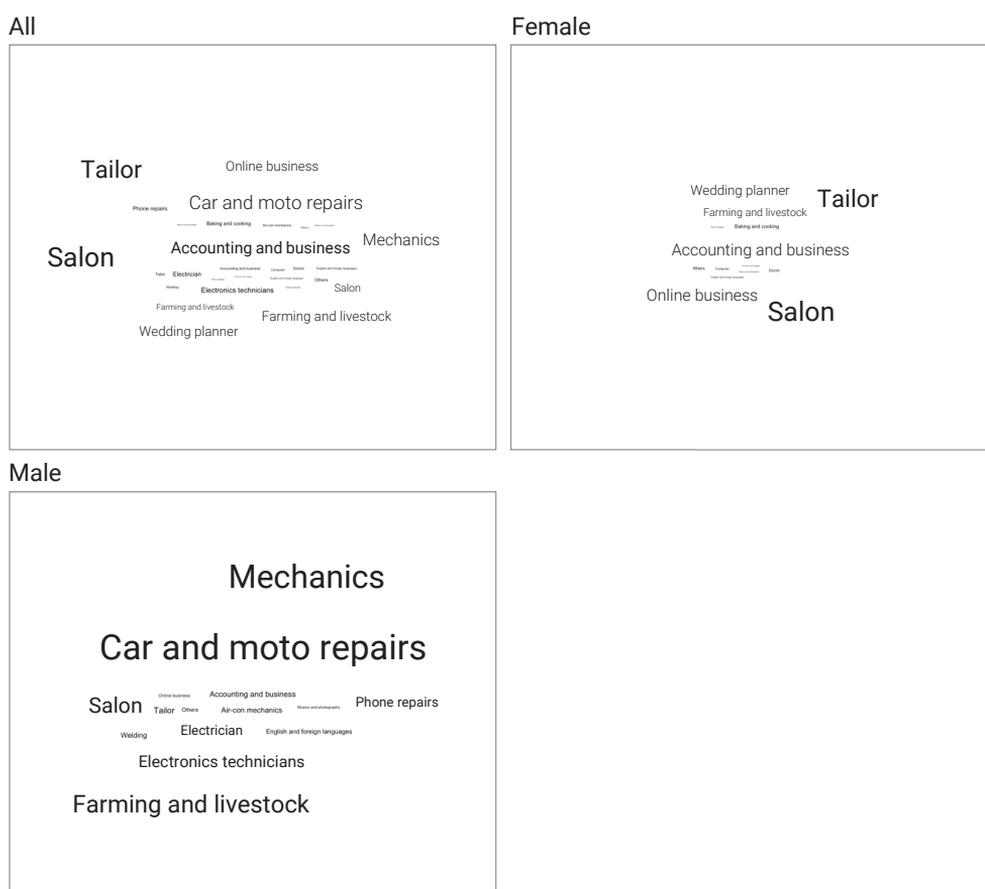
The garment, footwear, and travel goods sector is labour-intensive, relying mostly on low-skilled workers. This is indicative of the need for skill development of the workforce to help achieve the goal of moving up the value chain to higher value-added products as well as to enhance the workers capabilities in accessing better and higher-paying job opportunities within or between the industry. The government and relevant stakeholders have invested significantly in re-skilling and up-skilling. Nonetheless, the return of investment remains largely unknown. Compared to the baseline results, there has been an increased awareness among the surveyed respondents on training programmes provided by the government in response to COVID-19. However, the share of respondents who reported having attended a training course since June 2021 remains significantly low—4.3 percent. The types of training received are predominantly associated with occupational health and safety, labour law and regulation, and interpersonal skills. Despite the availability of the training courses, most surveyed workers (95.7 percent) did not attend the training. Lack of information (26.4 percent), being occupied with work and family matters (24.6 percent), and no relevant training courses (15.1 percent) are some of the main reasons for not attending. Having insufficient time due to work and family matters to attend the training is an often-cited reason among female respondents compared to a lack of information about the training courses reported by their male peers.

The workers prefer to attend a range of training courses, the top five of which are salon management (28 percent of the total cases), tailoring (17.6 percent), car and motorbike repairs (11.9 percent), accounting and business (9.5 percent), and farming and livestock raising (7.9 percent) (Figure 6). Female workers seem to be more interested in salon and tailoring skills, whereas their male peers are interested in mechanics and car and motorbike repairs. It should be noted that a small proportion of male workers are also interested in salon-related training, particularly barbers and clothes designers.

From these courses, it is indicative that most workers prefer learning new skills rather than up-skilling themselves based on the current demand in the garment, footwear, and travel goods sector. This is consistent with the finding in the expected outcome from the training course, in which occupational change is the most selected option (42.5 percent) for females and second most selected one (32.8 percent) for males, respectively. Aside from occupational changes, the surveyed workers also wish to improve their skills, and receive an increase in salary after attending the training. The results are also indicative of occupational gender segregation. That is, female respondents are interested in occupations or industries such as salon management, tailoring, accounting and business, wedding planning, online businesses, whereas self-reported occupations by male respondents include mechanics, car and motorbike repairs, and farming and livestock raising.

Looking further into the structure of the training arrangement, female respondents prefer longer training courses between 2-6 months (32.8 percent), followed by on-the-job training (25.8 percent). In contrast, nearly half of male respondents prefer on-the-job training (47.0 percent) or training courses lasting more than 2-6 months (28.4 percent). Training courses up to and less than a month are among the least preferred by both sexes. About 63.3 percent of the surveyed workers want the training to be provided on Sundays. Significantly lower percentages are reported for the training to be provided during working days (14.7 percent), after working hours (11.1 percent) or on a Saturday (5.9 percent).

Figure 6: Word cloud of training courses wanted by workers



Source: Authors' calculations.

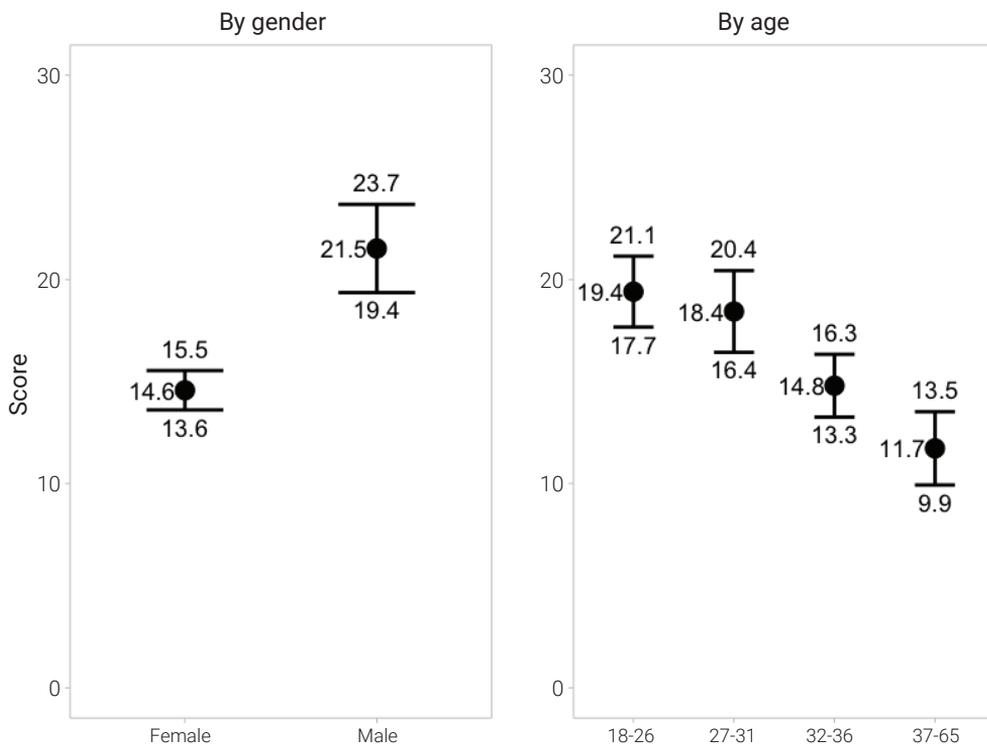
To encourage up-skilling and re-skilling in this sector, support from the government and employers is equally important. Monetary incentives, either by the government or employer, are perceived as most useful by the surveyed workers. From the government, free training courses, subsidies to the training costs, and encouraging employers to implement a no-wage deduction policy for participation in the training on weekdays are

the most desired support. Non-monetary support including counselling and awareness raising are perceived to be the least useful. Similar findings are evident in the results on the support needed from the employer. Free training courses (23.0 percent), training during weekdays without wage reduction (17.3 percent) and subsidies to the training cost (17.0 percent) are also reported as the most wanted support. Meanwhile, other non-monetary support is still perceived as less useful.

b) Digital literacy

COVID-19 has accelerated digital adoption and adaptation in many aspects. Financial technology (FinTech) is one. However, accessing such technology requires skills and literacy. About 90.0 percent of the surveyed respondents have access to a smartphone, whereas 46.2 per cent of them do not have mobile banking/e-wallets and other shopping/food delivery applications on their phones. The three most common mobile banking applications are ACLEDA (22.3 percent), Wing (21.4 percent), and ABA (5.9 percent). These commercial banks offer payroll services and are used by the government as a mean for cash transfers in response to COVID-19.

Figure 7: Average score of perceived digital literacy and ICT skills, by gender and age group



Note: The error bars indicate lower and upper bounds with 95% confidence interval.
Source: Authors' calculations.

We also examine the level of digital and Information Communication Technology (ICT) literacy by asking the surveyed respondents to self-assess with a series of statements on a scale from 0 to 10 (0 being illiterate and 10 being competent at a workforce level). The assessment covers 'basic' to 'workforce' knowledge on the use of digital devices and comprehension of digital and ICT content. Out of 120 points, the average score is 16. Male respondents reported a high average score (21.5) compared to their female counterparts (14.6) (Figure 7). The difference is statistically significant at a 1% confidence interval. The level of digital and ICT literacy also varies by age group. That is, young workers are more likely to be digitally and ICT literate compared to their older peers. The difference is again statistically significant at a 1% confidence level. It should be noted that respondents generally score below 0.5 on the more advanced Information Technology (IT) skills such as the use of Microsoft applications, computer software, and basic ICT.

6. Discussion

One year after the baseline survey and the lifting of a series of lockdowns and other mobility restriction measures, the lives and livelihoods of female and male workers in the Cambodian garment, footwear, and travel goods sector have improved, albeit they are by no means out of the woods and at the pre-pandemic level.

The reopening has contributed to the increased wage and non-wage earnings of the workers as factories resume operations with existing and/or new orders from international buyers. Given that the basic salary remains largely unchanged, the workers rely significantly on overtime pay, particularly among female respondents as they earn relatively less in their basic salary compared to their male counterparts. The increased earnings have had a positive impact on household consumption as the majority of the surveyed respondents reported a rise in spending for food and non-food items. People are going out more than before as the COVID-19 lockdown is lifted (e.g., meeting with family and friends outside, dining out, and other socialising activities). The FGD results indicate that invitations for weddings, birthday parties, and funerals, to name a few, have recommenced. These expenses often account for a large proportion of total non-food expenditure. Another contributing factor is expenses on children's education as physical classes resume (e.g., tuition fees, books and stationery, allowances, and transport). Consumption expenditure on transportation and education, for instance, accounted for 10.2 percent and 2.1 percent, respectively, of the total household consumption in 2019. It should be noted that almost half of the total household consumption was on food (NIS 2020).

The increased consumption has also been significantly attributed to rising food and oil prices caused by an imbalance between supply and demand for goods and services and the Russian-Ukrainian war. These events have significantly disrupted the quantities of oil, other major agricultural commodities, and the international supply chains of

other commodities. When asked the reasons for the increased food consumption, approximately 70.0 percent of the respondents cited increased prices. For increased non-food expenses, 38.1 percent reported rising prices, followed by rising expenses on children's education and transportation (33.5 percent) and on social events and gatherings (26.0 percent). Increased earnings also contributed to the increase in consumption. Nonetheless, only 1.6 percent of the respondents reported that was the case, and there is no gender difference in the reported figure. The workers might need to deal with a dual crisis: downside risks caused by possibly new waves of COVID-19 infection as well as the subsequent cost of living and inflation. The workers remain cautious by avoiding excessive expenses and are worried that the persistent rise of oil and food prices could put more pressure on their already low earnings.

The government has been determined in its vaccination campaign aiming to achieve herd immunity to minimise the risk of further lockdowns and mobility restrictions. Cambodia is one of the countries with the highest rate of vaccinations in the world—95 percent of the population has been vaccinated. Approximately 10 million people have received a third dose, whereas 4 million have received a fourth one. The vaccination success is also evident in our data with 98.0 percent of the surveyed respondents having received the vaccinations, and 91.2 percent have received third and/or fourth doses. It should be noted that there is no gender difference in vaccinations. The high vaccination rate is a confidence booster for the government to reopen the economy. The government has recently removed measures that require travellers from abroad, who are entering Cambodia by all modes of transport, to present a health declaration and COVID-19 certificate/card. The removal aims to further open the country as part of the economic recovery initiative, particularly to help the struggling tourism and hospitality sector.

The reopening has also seen a decline in the provision of public assistance, particularly in the form of cash transfer, to the surveyed workers, particularly those who were previously suspended. This is because 87.0 percent of the surveyed respondents were employed at the time of survey (4.0 percent suspended), making them ineligible to receive cash support from the government and employers. It should be noted that prior to the reopening, the government implemented a wage subsidy program of US\$70 (US\$40 from the government and US\$30 from employers) for workers who reported being suspended from work by employers for the specified duration of between 7 and 30 days. The workers who met the criteria were notified of a cash withdrawal code at the local agent, for instance Wing, via their registered phone number. The program, however, was concluded at the end of 2021. Pregnant workers who were suspended during March 2020 and June 2021 were entitled to a one-time maternity cash support of US\$90 under the condition that they completed a training course on occupational health and safety and soft skills. This support too has since been concluded.

Nonetheless, the respondents or their family members might still receive the cash support if they or their family members are IDPoor card holders. The scheme aims

to assist the households who have been affected by the COVID-19 pandemic and the initiative has been extended until the end of 2022, with a 3-month situational assessment. The support has cost the government approximately US\$50 million per month. The Prime Minister has recently announced the government's intention to expand the IDPoor program to an additional 30,000-40,000 households⁹. Moreover, to help lessen the adverse effects of the rising oil and food prices, the government is preparing to provide cash support to vulnerable households to compensate for the rising costs – a public intervention necessary for poor and vulnerable households to weather this difficult time. The Ministry of Planning together with the National Social Protection Council (NSPC) has been instructed to examine necessary procedures to identify target beneficiaries and to set appropriate levels of cash support and other mechanisms. Thus, the fiscal policies remain supportive to assist the recovery, albeit with limited fiscal space.

The minimum wage, which is currently applied to workers in the garment, footwear, and travel goods sector, could partially lessen the negative impact. The government, through the National Council on Minimum Wage, has agreed to increase the minimum wage to US\$200 per month in 2023. This represents a US\$6 rise from the current level of US\$194. Nonetheless, the increase could be offset by inflation if the rising oil and food prices continue. Inflation is projected to peak this year, and lower in 2023 (ADB 2022; IMF 2022). In this vein, tempering inflation is and will be one of the government's fiscal and monetary priorities, at least, for 2022 and 2023.

Access to skills training remains low, so does the willingness to invest in re-skilling and up-skilling. There are also no differences between female and male workers in their desire to participate in skills training. Although the garment, footwear, and travel goods sector has contributed to exports and employment, the structure of the industry has not changed much for the last few decades, producing low value-added products, and relying on low-skilled labour. In an effort to diversify the industry, the government launched the Cambodia Garment, Footwear and Travel Goods Sector Development Strategy (2022-2027) early in 2022, aiming to provide direction to deepen vertical upgrades and diversify to higher value-added production lines. The framework outlines six strategic measures to achieve the stated goals, one of which is the strengthening of human resources to boost productivity and to create horizontal and vertical career paths for the workers. This involves skill transfers and upgrades for the workers so that they can be responsible for higher-order tasks. However, achieving this strategic component can be challenging with the current low-skilled labour force employed in this sector, the lack of participation in the skills development program, and the limited absorption capacity.

The workers continue to rely on a few strategies to cope with financial difficulties. Borrowings from formal and informal sources was the most common strategy to

⁹ The cash support has been shown to help households cope with the shock of COVID-19 (UNDP 2022).

deal with financial problems during the COVID-19 pandemic. One year since the reopening, borrowings, particularly from informal sources, remain the most often-used coping strategy, followed by asset sales, reduced consumption, and savings. Indebtedness and over-indebtedness continue to be a macro-economic stability concern deserving of a constant monitoring system by competent institutions. The issue should be addressed from the demand and supply side. On the demand side, financial education continues to be necessary. Empirical studies have argued for the negative association between financial literacy and the level of indebtedness (e.g., Morgan and Trinh 2019). Morgan and Trinh (2019) also find that financial literacy could lead to higher savings. On the supply side, prudent and sustainable lending practices are needed. Overall, the banking system has been reported to remain sound and resilient and has continued to provide credits in the recovery efforts. Assets and deposits of the banking system grew by 18.0 percent and 17.7 percent year-on-year, respectively. Bank credits have also increased significantly by 26.4 percent (NBC 2021). The report also highlights the sound and resilient microfinance sector which supports households, agricultural activities, and Small Medium Enterprises (SMEs) in the recovery. Despite the contribution, there have also been accounts pointing to the hardship that borrowing households/individuals endure which lead to unsustainable lending practices by microfinance institutions and banks (e.g., lending against land titles even though Microfinance Institutions or banks know that the borrowers could not service the loan given their current income) (Bliss 2022).

7. Conclusion and policy suggestions

In this study, we employ a panel survey of workers in the Cambodia garment, footwear, and travel goods sector to investigate economic, social, and mental impacts of the lifting of the lockdowns and other mobility restriction measures in November 2021. In June 2022, we followed up with 2,000 workers who were initially interviewed in June 2021. The respondents were interviewed by phone in both rounds. The questionnaire was designed using KoBo ToolBox, and the enumerators used tablets to interview. The aim is to examine the evolution of workers lives and livelihoods one year after the government decided to reopen, albeit maintaining certain health measures to curb the spread of COVID-19. We interviewed 1,320 workers, resulting in an attrition rate of 34.1 percent. We employ a fixed-effects difference-in-differences regression estimation approach to quantify the potential effects of reopening and the gender differences that might occur. We further use the quantile regression method to investigate distributional effects of the reopening, disaggregated by gender. We also examine access to skills training and digital literacy of the workers.

The results show that the reopening has had positive and significant effects on wage and non-wage earnings, and that female respondents have benefited as much as their male counterparts. Specifically, salary earnings increased by 5.4 percent—4.7 percent for basic salary (resemblance to minimum wages) and 12.7 percent for overtime

earnings. Female workers tend to have lower basic salary compared to their male counterparts. However, they have earned significantly more through overtime work. Food and non-food consumption have also increased which are attributable to the reopening and subsequently the increased income. The increasing oil and food prices might have also contributed to the rise in consumption, presenting another challenge for the workers, their family, and the government. The reopening has also lowered the level of stress which workers face in conjunction with an increased positive mentality, and men have gained more in terms of mental wellbeing than women.

Given the results, we suggest the following.

- It is necessary that the government closely monitors inflation, at least in 2022 and 2023, as the rising oil and food prices have put pressure on the workers' earnings and could offset gains from the increased minimum wage starting in January 2023. It is optimistic, however, that the government has been proactive on this front, announcing additional measures to help poor and vulnerable households cope with these global changes. Women remain relatively vulnerable compared to their male peers. Thus, creating a gender-based program is suggested.
- Household credit growth and a heavy reliance on formal and informal borrowings to address financial difficulties remain a macro-economic stability concern and one that requires close monitoring and assessment from competent institutions. Financial literacy has been and will continue to be relevant to help address the issue. Quality, sustainable, and ethical lending practices by banks and microfinance institutions are also a contributing factor to lower the risk of indebtedness and over-indebtedness. Financial literacy campaigns and training should be gender neutral as female workers rely on borrowing to cope with financial difficulties as much as their male counterparts. One of the focus points of the financial literacy training should be on the importance of saving and how to save with formal institutions.
- Skills training as part of the re-skilling and up-skilling agenda remains crucial. Nonetheless, the demand for skills training by the workers tends to lean towards ones which require less cognitive intensity and comprehension. They also focus more on skills that could provide quick returns and are not time-consuming to acquire. For instance, salon and tailoring skills are among the most desired by the workers, particularly women. Other factors should also be considered when designing training courses for the workers—including training days (the present study determined a preference for weekdays and Sundays), training duration, and employers' support of no salary deduction for the training participation if it is conducted on a weekday. It is necessary that training schedules should be flexible to increase uptake. Online training seems to be less popular as digital literacy remains low, limiting participation and constraining comprehension. Face-to-face training might be more effective.

- Digital literacy remains low among female and male workers, further constraining the ability to adapt and adopt new technologies (e.g., data analytics, semi-automation, enterprise resource planning, computer-aided design, augmented reality, and cloud-based production) which have the potential to improve work efficiency and boost labour productivity. Digital literacy campaigns, particularly on the use of digital payment platforms, should be carried out. Although the level of digital and ICT literacy tends to be lower among female workers relative to their male peers, awareness raising campaigns and training on digital and ICT skills should be gender neutral.

A caveat of this study is the inability to re-weight the sample to account for the missing observations which could introduce bias and impact generalisation of the results. Thus, further studies using panel surveys need to be cautious as attrition is inevitable. Measurement errors because of the use of phone interviewing is another point of improvement. Albeit flexible, phone surveys have several disadvantages, including the inability of the enumerators to observe the respondents' behaviour and body language, inability to use visual aids to assist the interviewing, and a high probability that the respondents would hang up the phone.

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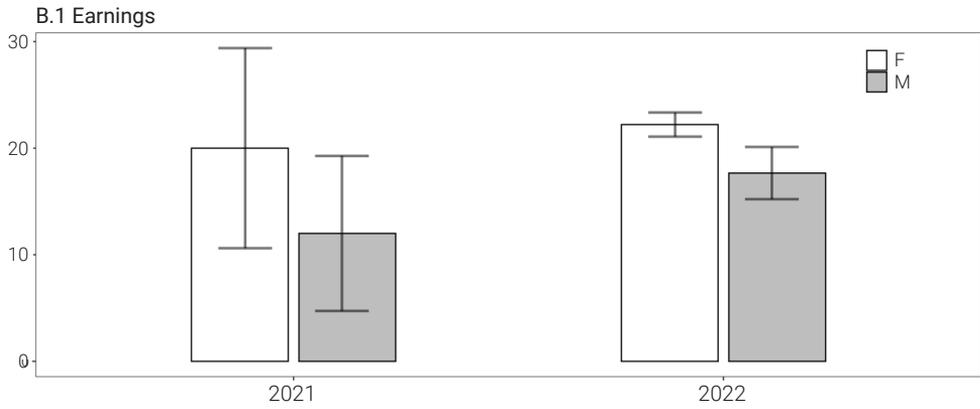
Appendix A: Gender differences in characteristics

	Obs.	All (1)	Men (2)	Women (3)	Diff (2)-(3)
Age (completed years)	1,320	32	31	32	-1* (-1.481)
Marital status (1=married)	1,320	0.103	0.832	0.728	0.103*** (3.576)
# of family members currently living with the respondents	1,320	4.193	4.095	4.220	-0.125 (-0.982)
# of dependents	1,320	1.727	1.716	1.730	-0.146 (-0.158)
# of children	1,320	1.431	1.393	1.442	-0.049 (-0.675)
Position (1=manager/team leader and technicians)	1,320	0.167	0.337	0.119	0.217*** (8.960)
Salary (US\$/month)	1,146	284	316	274	42*** (7.379)
Basic	1,120	198	213	193	20*** (4.264)
Overtime	1,120	81	94	78	16*** (4.150)
Salary by position (US\$/month)					
Managers/team leaders	57	442	468	392	76** (1.766)
Workers (technicians)	144	319	351	301	50** (2.048)
Workers (general)	945	269	273	268	6* (1.456)

Note: Data of the 2022 survey round is used. t-statistics are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

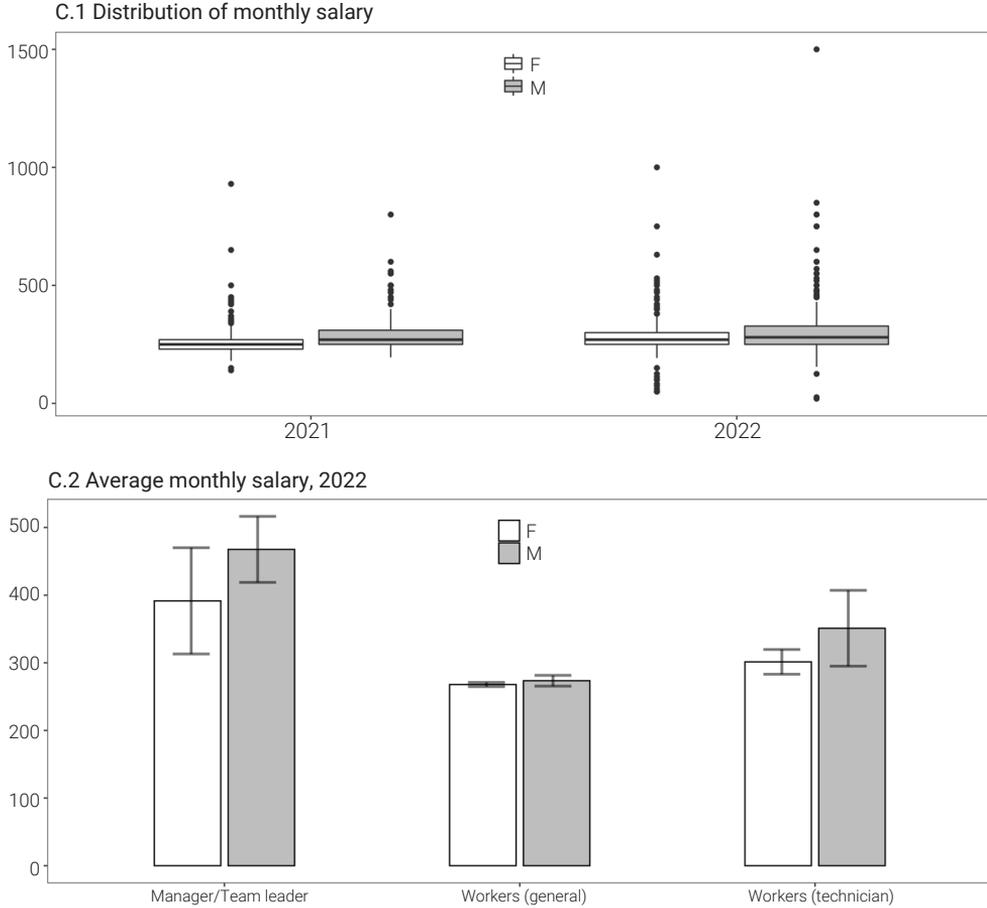
Source: Authors' calculations.

Appendix B: Self-reported increases in income earnings and hours worked (%)



Note: The error bars indicate lower and upper bounds with 95% confidence interval. F – female; M – male.
 Source: Authors' calculations.

Appendix C: Monthly salary (US\$)

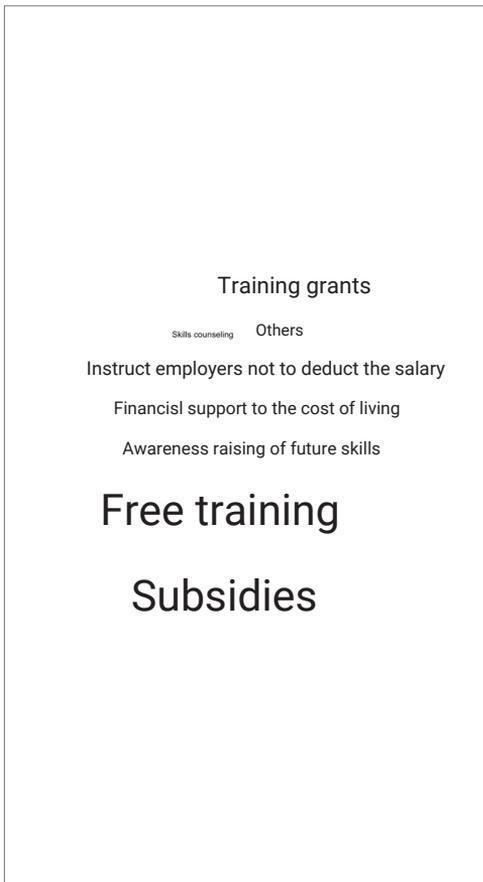


Note: The salary comprises of basic wage and overtime. Questions asking the respondents about their position in the factory were not included in the 2021 survey. The error bars indicate lower and upper bounds with 95% confidence interval. F – female; M – male.

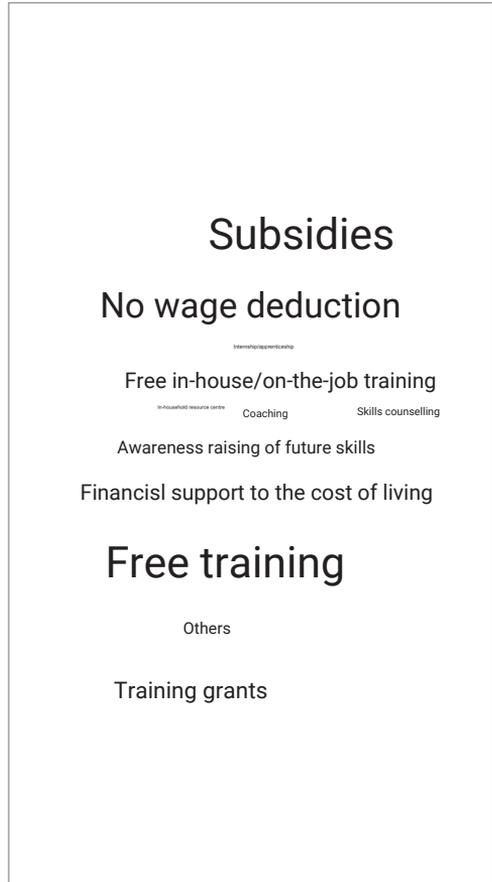
Source: Authors' calculations.

Appendix D: Word cloud of the support useful for the workers to upgrade their skills

Government



Employer



Source: Authors' calculations.

Appendix E: Description of variables

Variables	Type	Explanation
Outcomes		
Salary	Continuous	Monthly total salary (basic and overtime)
Basic salary	Continuous	Basic salary
Overtime pays	Continuous	Overtime pays
Total earnings	Continuous	The total amounts of wage and non-wage earnings by the household
Remittances	Continuous	The amounts sent to family members at home
WHO-5 score	Continuous	0-100 (0 represents the worst imaginable well-being, 100 the best imaginable well-being)
Food insecurity	Categorical	1 if the respondent reported having food insecurity since 2021
Financial difficulties	Categorical	1 if the respondent reported having financial difficulties since 2021
Domestic violence	Categorical	1 if the respondent reported experiencing domestic violence
Conflicts at the workplace	Categorical	1 if the respondent reported experience conflicts at the workplace
Access to social assistance	Categorical	1 if the respondent reported receiving social assistance since 2021
Employment change	Categorical	1 if the respondent reported changing jobs
Controls		
HH size	Continuous	Household size (the respondent and members currently living with her/him)
Age	Continuous	Age of the respondent
Gender	Categorical	1 if the respondent is female
Marital status	Continuous	1 if the respondent is married
Dependency ratio	Continuous	Total number of dependents (0-14 & 60+) by working age (15-60) members
Context and region		
Location	Categorical	1 if the factory is in Phnom Penh, 0 otherwise

Source: Authors' preparation.

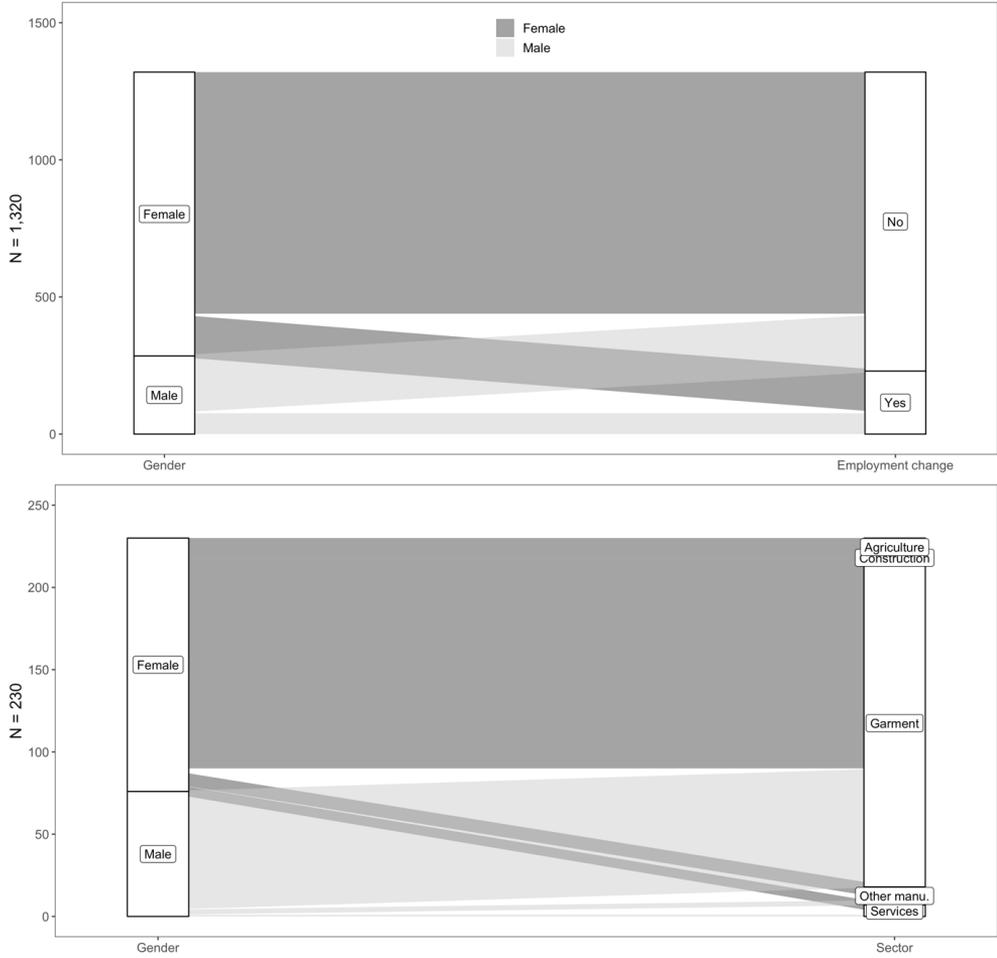
Appendix F: Probability of leaving the sample

	All		Female		Male	
	(1)	(2)	(3)	(4)	(5)	(6)
Sex	0.063 (0.084)	0.044 (0.098)				
Age	-0.092*** (0.027)	-0.092*** (0.031)	-0.067** (0.030)	-0.069* (0.036)	-0.194*** (0.059)	-0.160** (0.064)
Age squared	0.001*** (0.000)	0.001*** (0.000)	0.001* (0.000)	0.001* (0.001)	0.002*** (0.001)	0.002** (0.001)
Marital status	0.252** (0.115)	0.093 (0.163)	0.280** (0.127)	0.093 (0.190)	0.321 (0.292)	0.211 (0.336)
Household size	-0.016 (0.016)	-0.021 (0.019)	-0.028 (0.018)	-0.031 (0.021)	0.053 (0.042)	0.036 (0.047)
Dependency ratio	0.051 (0.086)	0.105 (0.102)	0.092 (0.094)	0.150 (0.113)	-0.235 (0.220)	-0.166 (0.258)
WHO-5 score	0.004*** (0.002)	0.004** (0.002)	0.004** (0.002)	0.004** (0.002)	0.004 (0.004)	0.005 (0.004)
Spouse co-earns	-0.237** (0.106)	-0.102 (0.153)	-0.265** (0.118)	-0.076 (0.180)	-0.194 (0.251)	-0.250 (0.299)
Receipt of cash support	-0.099 (0.061)	-0.057 (0.071)	-0.107 (0.066)	-0.034 (0.077)	-0.138 (0.168)	-0.269 (0.190)
Lack of food	0.014 (0.065)	0.006 (0.075)	-0.058 (0.072)	-0.077 (0.084)	0.292* (0.155)	0.327* (0.181)
Financial difficulties	0.062 (0.076)	0.067 (0.086)	0.059 (0.085)	0.082 (0.097)	0.169 (0.187)	0.080 (0.200)
Conflicts at home	-0.053 (0.066)	-0.060 (0.076)	-0.063 (0.074)	-0.064 (0.085)	0.071 (0.161)	0.051 (0.182)
Factory location	-0.026 (0.066)	-0.034 (0.079)	-0.070 (0.074)	-0.102 (0.089)	0.172 (0.149)	0.226 (0.177)
Income earnings		0.000 (0.001)		0.001 (0.001)		0.000 (0.001)
Constant	1.071** (0.454)	0.869 (0.544)	0.777 (0.503)	0.430 (0.630)	2.393** (1.003)	2.023* (1.098)
Obs.	2,000	1,556	1,596	1,229	404	327
pseudo R ²	0.017	0.013	0.013	0.011	0.065	0.063

Note: The dependent variable takes the value 1 if the respondents drop out of the survey, and 0 if they present in both rounds. The estimates are in marginal effects. Robust standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Authors' calculations.

Appendix G: Sectoral employment change since June 2021



Source: Authors' calculations.

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