Refugees Labor Market Integration in Kenya

*Kefa Simiyu**

ABSTRACT

We analyze labor market outcomes among refugees in Kenya during the COVID-19 pandemic. The analyses are based on eight waves of the COVID-19 Rapid Response Phone Surveys dataset. We employ static panel regression, and test for robustness of the results in a staggered difference-in-difference regression. Findings suggest that employment rate, hours worked, and labor income differed across the waves. Employment rate rose in the last four waves relative to the first four waves of the pandemic. Average hours worked declined relative to the level at the onset of the pandemic. Whereas gender insignificantly affected employment rate, females worked fewer hours compared to males. The higher the educational attainment, the likelier the refugee was employed. College graduates earned higher incomes compared to refugees without formal education. Males and females had similar labor market outcomes for the same level of education. In terms of coping actions, adopters were less likely to be employed in waves 5-8, worked fewer hours, and had lower labor incomes compared to non-adopters. In line with the findings, we recommend, among other things, the implementation of job interventions that target refugees, and proper targeting of social protection and education programs to incentivize work, and raise refugees' human capital.

KEYWORDS

Coping actions, Covid-19 pandemic, Labour market outcomes, Refugees in Kenya

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1. Background

In 2021, a new Refugee Act was enacted in Kenya to ameliorate the labor market integration of refugees. This Act grants refugees the right to work in Kenya alongside streamlining the process of issuing work permits. This contrasts with the Refugee Act of 2006 that denied refugees the right to work in the country, while treating them solely as "victims in need of protection". Still, Kenya lacks full integration of refugees in the labor market, necessitating an analysis. This paper analyzes labor market outcomes among refugees in Kenya during the coronavirus (COVID)-19 pandemic period. This analysis is important since there were various refugee-specific interventions targeting their integration before and during the pandemic (Schuettler & Caron, 2020). Before the pandemic, these interventions included business registration assistance, employment within refugee camps, language and business skills training, the enrolment of children of school-going age and young adults in educational institutions, assisted job search efforts, and informal working arrangements with host communities. Interventions during the pandemic entailed social protection, and included remittances and assistance from the government, non-governmental organizations, and faith-based organizations. Previous studies in Kenya such as Vintar et al (2022) and Pape et al (2021) did not consider these interventions.

Refugees are a special category of victims of forced displacements. The other category constitutes internally-displaced persons (IDPs). Forced displacement of persons and communities has risen globally in the recent past (World Bank, 2023b). This has generated two effects: one, displacement-induced livelihood destruction forces victims of forced displacement to rely on humanitarian assistance. However, humanitarian assistance has declined over the years (Schuettler & Caron, 2020). Shrinking humanitarian assistance has further eroded the ability of victims of forced displacement to cope with negative shocks to livelihoods. Two, causes of forced displacements such as war, prolonged floods, and severe droughts have been shown to disrupt labor markets while simultaneously affecting educational accumulation among affected groups (Wood et al, 2019). For instance, time spent in transit characterizes school time lost among child victims (Fiala, 2015). School time lost undermines human capital accumulation among affected children, thereby aggravating vulnerabilities that are multi-dimensional.

Globally, vulnerability of victims of forced displacement arises from their identity as refugees or IDPs, and subsequent treatment as either 'victims' or 'individuals deserving protection' (World Bank, 2023b). The World Bank (2023b) indicates that their vulnerability is worsened by them naively treating host communities as protection sanctuaries. That is, host communities rarely consider displaced persons' well-being as a priority. Brell et al (2020) argue that displaced persons experience deplorable labor market outcomes compared to non-victims. Related global scholarship suggests that vulnerability of displaced persons develops from labor market non-integration within the host community (Schuettler & Caron, 2020). Verwiebe et al (2019) attribute non-integration to punitive anti-immigration policies that nourish hostility towards displaced persons. Moreover, hostile labor market policies such as non-recognition of prior learning acquired by non-natives, and requiring refugees to give up benefits accrued to them as refugees

once formally employed, in Turkey exclude them from public service employment (Pinedo-Caro, 2020; Demirci & Kirdar, 2023).

Nevertheless, treating victims of forced displacement as equally exposed to vulnerabilities is misleading. For instance, the lived experiences of internally-displaced persons differ substantially from that of refugees (Verme & Schuettler, 2021). Similarly, the burden of forced displacements falls disproportionately on women, young people, and children (Borsch et al, 2019). In Kenya, internally-displaced persons are usually resettled and integrated faster compared to refugees. Vulnerability of refugees in Kenya is aggravated by three things as discussed below.

Kenya's economic underdevelopment has meant that improving the lives of refugees depends on the inflow of donor aid (Omata, 2021). Besides, decisions about refugees, e.g., relocation of refugee camps, are made without the input of refugees. Relocation decisions consequently affect the availability of aid. Alix-Garcia et al (2018) indicate that shifting refugee camp from Lokichoggio to Kakuma led to aid leaving Lokichoggio. As a result, refugees that couldn't emigrate from Lokichoggio missed out on aid availed in Kakuma. Two, association of refugee camps with terrorism aggrandizes the already-vulnerable individuals. In 2022, Kenya closed down Dadaab Camp over suspected association with terrorism. Three, many refugees in the country lack proper documentation despite existence of legislations such as the new Refugee Act of 2021 (Pape et al, 2021). This has hindered formal employment of refugees as well as prevented them from registering enterprises (International Finance Corporation (IFC), 2018).

Relatedly, there has been a general reduction in aid financing that targets displaced persons (World Bank, 2023b). Cutdowns on targeted aid-financing have meant that refugees look for alternative coping mechanisms during periods of economic turmoil (World Bank, 2023a). One such a mechanism has been relying on the labor market for livelihoods (United Nations High Commission for Refugees (UNHCR) & World Bank, 2021). However, integration of refugees into Kenya's labor markets remains low for various reasons discussed earlier. In some refugee settlements such as Kalobeyei Camp, labor markets are non-existent (Betts et al, 2018). In others, e.g., Kakuma Camp, refugees are only permitted to work within, and not outside, the camp (Alix-Garcia et al, 2018). This has subsequently limited sources of livelihood among refugees, thereby compromising their resilience towards negative shocks such as during COVID-19 pandemic.

Research on displaced persons in Kenya focuses largely on refugees. This is because internal displacements that lead to IDPs tend to be short-lived, with IDPs being integrated within an election cycle (less than five years). The existing research analyzes refugees labor market outcomes alongside barriers to the integration of refugees in Kenya's labor markets. These studies reveal high unemployment rate among refugees relative to Kenyan nationals (Betts et al, 2018; Vintar et al, 2022), extremely low compensation among refugees employed within refugee camps such as Kakuma (Betts et al, 2018), and that the formal employment of refugees is undermined by opposition from local communities (Alix-Garcia et al, 2018; Bhagat, 2020; Omata, 2021).

2. Literature Review

2.1 Conceptual Framework

Studies on labor market outcomes among refugees, and other victims of forced displacements, consider labor market integration within the host community/ country as vital in addressing the vulnerability of displaced persons. These studies could be categorized into three strands. In the first set of studies, vulnerability is understood as an outcome of labor market non-integration, job formality, and job quality (Verme & Schuettler, 2019, 2021; Becker, 2022; Pinedo-Caro, 2020; Vintar et al, 2022; World Bank, 2023; Demirci & Kirdar, 2023). Here, vulnerability depends on access to economic opportunities. The second set of studies builds on the political economy, and the sociology, of work (Morrar & Rios-Avila, 2020; Brell et al, 2020; Arendt, 2022; Lerner & Turner, 2019; World Bank, 2023). These studies analyze extant socio-political hierarchies that hold back full integration of displaced persons. These hierarchies manifest along identities (i.e., displaced persons versus locals, and displaced communities versus host communities) (Alix-Garcia et al, 2018), and the competing interests among political actors vis-à-vis displaced persons (World Bank, 2023a, b). The third bunch of studies recognizes vulnerability as heterogenous across communities of displaced persons and individuals (Brell et al, 2020; World Bank, 2023a, b; IFC, 2018; Demirci & Kirdar, 2023; Arendt, 2022). Characteristic of this categorization is that women and children experience vulnerability differently from men and adult counterparts. Similarly, vulnerability is non-uniform between IDPs and refugees, employed and unemployed, or rural/ camp and urban refugees.

Migrant analysis in McKenzie & Yang (2022) treats migrants as a homogenous group. According to the authors, individuals migrate for economic reasons that can be deciphered beforehand. When net perceived benefits from migration exceed the cost of migration, individuals emigrate. The authors, thus, assume that migrants have an array of alternatives at their disposal, including opting to refrain from migration. However, as revealed in the World Development Report 2023, the precarity of forced displacements limits available alternatives to displaced persons (World Bank, 2023a). Suggestively, decisions made by general migrants do not always sync with choices available to displaced persons. In particular, displaced persons either migrate for asylum and survival or stay back and perish. Besides, time and resources available for migrants that are not displaced persons to compute cons and pros of migration is limited among displaced persons (Brell et al, 2020).

Many people rely on the labor market for livelihoods as employees. The employment of displaced persons is often undermined by their lack of integration on the host community's labor market. Brell et al (2020) argue that incentives to integrate tend to be low when displaced persons perceive the host community as an intermediate destination. That is, displaced persons fail to fully participate on the host community's labor market as well as in educating their children when they believe that their stay is temporary. By conceiving host communities as refugee sanctuaries or labor markets, refugees fail to recognize that these countries have interests of

their own, and which would inevitably be pursued (World Bank, 2023a). Relatedly, viewing refugees as 'victims to protect' disincentivizes host countries from tapping into the human capital they embody (Lenner & Turner, 2019). In some circumstances, refugees embody human capital that may be inapplicable in the host community's labor market, e.g., language (Arendt, 2022). Besides, foreign academic credentials may be unrecognizable in the host country (Pinedo-Caro, 2020). These factors act jointly to undermine labor market integration and increase vulnerability among displaced persons.

With one (1) in every two (2) job hires being sourced from referrals (Pieper et al, 2019; Glitz & Vejlin, 2021), the extent to which individuals integrate on the labor market is affected by the networks they forge. Brell et al (2020) argue that social networks form the first reference point in communicating job opportunities. Since building one's social networks takes time (Meyer et al, 2020), networks that refugees forge with the host community tend to be low during the first few weeks of settling down and acclimatizing. Thus, unemployment rates among refugees tend to be very high immediately after arrival in the destination country (Brell et al, 2020). As refugees acclimatize, it is expected that social networks increase leading to an increase in job opportunities that are shared. Sometimes, refugees encounter social exclusion instead of building up social networks with the host community. Social exclusion originates from refugees being targeted and persecuted for 'taking up jobs' supposedly meant for the host community (Alix-Garcia et al, 2018). Morrar & Rios-Avila (2020) reveal that social exclusion paves way for discrimination of refugees on the labor market. Thus, weak social networks and network depravity exacerbate labor market non-integration and widen vulnerability among refugees.

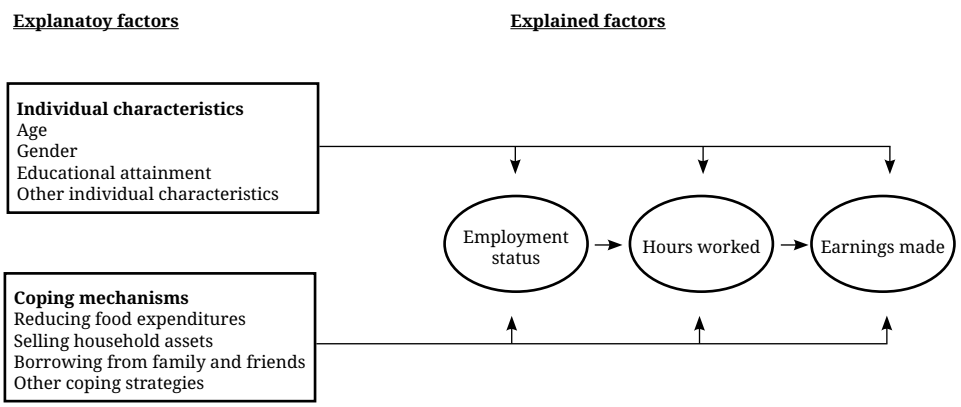
The political economy dictates the extent to which displaced persons integrate as well as their respective labor market outcomes. For instance, informal employment of refugees rises in host countries that have strong interest groups benefiting from informal labor (Lenner & Turner, 2019). Informally-employed refugees, in turn, forego opportunities otherwise availed in the formal sector. Informality is exacerbated by absence of trade unions that lobby for better jobs for refugees. Thus, informality creates additional informality. Besides, refugees often take up informal jobs left behind when locals transition to the formal sector (Demirci & Kirdar, 2023). Sometimes, refugee unemployment, or employment in low-wage informal sectors, arises from work environments that disadvantage refugees. Such environments include a train-first environment that mandates investment in human capital prior to employment (Arendt, 2022). A train-first work environment, therefore, delays the employment of refugees without requisite skills. Other policies, e.g., linking government cash transfer schemes with formal employment contribute to work precarity. Demirci & Kirdar (2023) indicate that formal employment of refugees in Turkey requires refugees to forego refugee benefits.

Treating displaced persons as a homogenous group ignores their lived realities that vary across age and gender (World Bank, 2023b). Female refugees and young adults experience labor market challenges and vulnerabilities differently from male and older adult refugees, respectively. These differences are shaped by social norms, culture, differences in educational attainment, and employer bias. In a refugee survey within Kakuma town, women from some nationalities

could not open/ run butcheries due to cultural constraints (IFC, 2018). Broadly considered, gendered labor market heterogeneities among refugees reveal the following: one, unemployment rate among female refugees tends to be high relative to their male counterparts in paid work (Brell et al, 2020). In unpaid work, such as working for other households for free or receiving in-kind payment for work done, the proportion of employed female refugees outstrips that of males (Demirci & Kirdar, 2023). Two, employed female refugees receive low wages, on average, compared to their male counterparts (Brell et al, 2020). Three, policy interventions that target displaced persons may work for one gender and not the other (Arendt, 2022). Arendt (2022) shows that this is true for the case of Denmark's work-first policy. According to Arendt (2022), the work-first policy significantly raised employment rate, hours worked, and wages for male refugees. Among female refugees, work-first policy insignificantly affected labor market outcomes.

This paper builds on the World Development Report of 2023 (World Bank, 2023a, b). World Bank (2023a, b) distinguish refugees from expert migrants, and separate skilled refugees from unskilled refugees. The idea is that the host community's labor markets demand certain skills. Refugees with these sought-after skills easily secure employment leading to skilled refugees being strongly matched to jobs that exist on the host community's labor market. Matching of skilled refugees to available vacancies happens only when migration costs are outweighed by related benefits (McKenzie & Yang, 2022; World Bank, 2023a, b), and opposition to refugees' labor market integration is low, or non-existent (Alix-Garcia et al, 2018).

Figure 1: Conceptual framework



In the figure, arrow indicates the direction of effect.

From the aforementioned, labor market outcomes among refugees are not uniform. This is due to differences in skills embodied by refugees, and proxied by educational attainment. Labor market outcomes also differ between gender and across age as well as over a set of other demographic characteristics— e.g., composition of the household in terms of number of household

members and their respective educational attainment. Since not all individuals and households adopt the same coping mechanisms in response to shocks, labor market outcomes could further differ across individuals based on the coping mechanism adopted. Now labor market outcomes are related such that hours worked are observed for an employed individual. Labor earnings made are also observed for the employed. These earnings could further depend on hours worked. This relationship is presented in Figure 1.

2.2 Related Empirical Studies

Hoseini & Dideh (2022) consider vulnerability of displaced persons as an outcome of precarious work environment. The authors utilize both refugees and nationals' data in Iran, and employ ordinary least squares (OLS) estimation. The results suggest that Afghan refugees in Iran experienced short unemployment durations compared to Iran nationals. The findings also indicate long work week hours among refugees relative to Iran nationals. In an alternative specification that employs logit regression, the findings suggest that layoffs were less common among Afghan refugees in comparison to Iran nationals. In the presence of shocks, the average work week among Iranian nationals was significantly short compared to that for Afghan refugees. 'Shocks' was proxied by nominal appreciation of Iranian rial against United States dollar on a year-on-year basis.

The authors argue that economic turmoil made labor incomes attractive among refugees. This then incentivized them towards working more. Nevertheless, it could be that the threat of unemployment raised the cost of shirking among refugees. This is because the authors indicate high replacement probability among refugees relative to natives. Furthermore, the authors indicate that refugees were just as likely to be laid off as natives during economic downturns. This could arise from refugees being used as buffers. Besides, Afghan refugees tolerated working over extended durations for less compensation in comparison to Iranian nationals.

Morrar & Rios-Avila (2020) analyze labor market outcomes between refugees and non-refugees in Palestine based on age, gender, and educational attainment. Employing the recentered influence function OLS, the authors reveal refugees in the 50^{th} and 90^{th} quantile gaining more from an additional year of schooling compared to non-refugee counterparts. Focusing on gender, the findings suggest significantly higher hourly wages for males [refugees and non-refugees] in comparison to females. Cross-group analysis reveals refugee wages that were significantly low relative to earnings among non-refugees. Lastly, hourly wages rose significantly during a worker's (refugee and non-refugee) early stages of life but later flattened out before declining. However, there were no statistically significant differences in the hourly wages between the two groups in the 90^{th} quantile of the wage distribution.

The authors argue that gendered differences in hourly wages arose from differences in bargaining power between males and females. That is, employers capitalized on weak bargaining power among female workers. Since the authors omitted the strength of labor unions and

union membership, the claim of low bargaining power among females appears superficial and subjective. The wage gap between refugees and non-refugees is attributed to discrimination against refugees. Discrimination was driven by weak social networks among refugees in the median- and low-wage jobs.

Pinedo-Caro (2020) analyzes labor market outcomes among Syrian refugees in Turkey within the context of labor law and legislations. The analysis was based on the 2017 Household Survey of the Labor Force in Turkey. The inter-group comparison reveals long work hours among refugees relative to non-refugees. Wage-wise, refugee wages were less than half the wages received by Turkish counterparts. Within-group analysis reveals adult refugees (30-65-year-olds) and male refugees earning high average wages relative to young refugees (15-29-year-olds) and females, respectively. In the survey, wages among 68.7percent of female refugees and 76.8percent of male refugees were below the minimum wage. The author argues that entrenched job informality among refugees led to the observed wage wedge between refugees and non-refugees. Informality arose from non-compliance to work permit requirements.

Relatedly, Demirci & Kirdar (2023) utilize the 2018 Turkey Demographic and Health Survey. In the fixed effects linear probability model, the authors indicate that Syrian refugees (male and female) were significantly less likely to be in paid employment relative to Turkish nationals. The paid employment gap between refugees and natives declined when education, age, region of residence, and household composition were controlled for. The finding also reveal that refugees were more likely to be out of the labor force in comparison to native Turks. These findings were attributed to refugees being less educated and younger on average/ inexperienced which, in turn, disincentivized employers from hiring them. Moreover, the authors argue that refugees tended to reside in provinces within the southeastern and the southern part of Turkey. These regions had limited opportunities for paid employment to non-natives.

Olivieri et al (2021) compare labor market outcomes among Ecuador-born locals and refugees from Venezuela over the period from 2016 to 2019. The authors estimate the gap in employment level and wages between Venezuelan workers and Ecuadorian locals in modified Mincer equations. The modification arose from replacing years of experience with a worker's age, and gender, alongside two refugee-origin dummies—from Venezuela, or another country within Latin America. This was complemented with a consideration of two policies—giving Venezuelan workers legal work permits, and matching educational attainment with employment. In estimating the models, the authors controlled for canton-level fixed effects. The findings suggest that Venezuelan workers earned lower wages, and were more likely to work informally compared to Ecuadorian workers. Informal wages were significantly lower than formal wages. Informality declined in educational attainment whereas wages rose in educational attainment. The results further reveal that female refugees earned significantly lower hourly wages compared to male refugees. There were no significant differences in informal employment between male and female Venezuelan workers. These findings were attributed to occupational downgrading among refugees. The downgrading led to skills embodied by Venezuelan workers being deployed less productively. This is because refugees took up jobs to which they were

overqualified. Even then, fewer than 2.5percent of Venezuelan refugees were hired in well-paying jobs within the public sector. This suggests that the availability of decent/ well-paying job opportunities was skewed.

Hallaq (2019) analyzes labor market outcomes between refugees and natives in West Bank and Gaza. The author employs the Oaxaca-Blinder decomposition on a dataset from 1999 to 2012. The findings indicate refugees earning significantly low wages relative to Israeli natives in West Bank. In Gaza, refugees earned significantly high wages relative to natives in Gaza. The author argues that harsher treatment of refugees in West Bank by the Israeli government depressed refugee wages. Since refugees in West Bank were vulnerable to absenteeism-induced replacement with non-refugee foreign workers, they accepted low wages. Refugee absenteeism from the workplace was driven by restricted refugee movement. Educated refugees in Gaza, however, could access Israeli labor market without restrictions. This subsequently raised wages for educated refugees relative to less-educated non-refugee foreign nationals.

Baum et al (2020) analyze the wage gap between refugees and Swedish nationals in routine versus non-routine occupations. The authors employ the Oaxaca-Blinder decomposition on a dataset from 2003 to 2013. The decomposition was preceded by coarsened exact matching and the correlated random effects estimation. The findings suggest that Swedish nationals earned significantly high wages relative to refugees in routine jobs. Native wages were 30percent and 8percent above refugee wages for male and female, respectively. This was attributed to differences in experience accumulated while on the job. In particular, a four-year experience gap was established in favor of Swedish nationals. In non-routine manual jobs, earnings among refugees exceeded those of comparable natives. This was true irrespective of the refugee entry cohort.

Arendt (2022) analyzes how labor market outcomes among refugees in Denmark under the train-first and the work-first policy. The analysis was based on a quasi-experiment, and employed the fixed effects OLS. The findings suggest that the work-first policy significantly raised hours worked and earnings made in the 9^{th}-11^{th} month relative to the train-first policy. Work-first policy also raised employment in the 11^{th}-13^{th} month after arrival in Denmark, and raised hourly wages among male refugees in the 15^{th} month. It was also evident that male refugees gained an additional two work weeks in a year as a result of job-training under the work-first policy. Female refugees gained only a day in a year. The author argues that matching among unemployed refugees and employers for job-training was biased against females.

Alix-Garcia et al (2018) analyze economic activities and labor market shocks in 648 villages within Turkana County, Kenya. The authors utilize the 2005-2006 Kenya integrated Household Budget Survey and the 2015 Hunger Safety Net Program (HSNP) dataset. HSNP was collected from October 2012 to June 2013. The inverse hyperbolic sine function and linear probability model were employed. The findings suggest that the closer a village was to a Kakuma Refugee campsite, the greater the economic activities. Economic activities were proxied by night light intensity. Economic activities also rose significantly in refugee population. The authors argue that population influx was followed by aid inflow, and hence refugees served as a positive

market shock. The findings also suggest within-camp returns to education exceeding educational returns in local towns. Secondary education more than doubled the chances of a refugee being wage-employed relative to lower educational attainments. The seemingly advantageous position of refugees in the labor market arose from within-camp employment opportunities. Nevertheless, it was unclear what disincentivized locals from seeking employment within the camp. This is because the authors indicate a majority of locals believing that refugee camps had better employment opportunities.

Relatedly, Betts et al (2018) reveal an almost non-existent labor market in Kalobeyei Refugee Camp, Kenya. As a result, refugees relied only on 'incentive employment', and the exchange of in-kind food aid with locals for cash. Incentive employment refers to work done by refugees that is similar to official/ formal employment carried out by Kenyan nationals; however, the earnings made by a refugee are much lower in comparison to earnings made by a Kenyan national for the same work. Incentive employment is, however, not unique to Kalobeyei Camp. Omata (2021) analyzes refugees' employment in Kakuma Camp and Nairobi. The author reveals 'incentive wages' being significantly low in comparison to wages accrued to locals. Since incentive wages are quite low, it would be expected that refugees look out for better job opportunities. In practice, such endeavors may be infeasible. Bhagat (2020) analyzes the political economy of refugee employment in Nairobi. The author reveals mounting opposition directed at the formalization of refugee employment. Consequently, affected refugees were pushed towards informal employment.

A major setback in Bhagat (2020), Omata (2021), Alix-Garcia et al (2018), and Betts et al (2018) is that the datasets, upon which the authors base their analyses, do not systematically report outcomes for refugees and locals. This problem arises from national surveys that previously did not systematically include refugees (Pape et al, 2021). A recent survey—the COVID-19 Rapid Response Phone Surveys (RRPS)— systematically captures data on refugees and Kenyan nationals. RRPS is an empirical breakthrough in studying labor market outcomes among displaced persons in Kenya.

Vintar et al (2022) utilize the 2020-2022 RRPS to estimate labor market outcomes among Kenyan urban nationals and refugees during COVID-19 pandemic. The authors employ county-level fixed effects. The findings suggest that the rate of employment gap between nationals and urban refugees widened from wave 1 (May-June 2020) to wave 4 (January-March 2021). As the pandemic progressed, hours worked and household incomes by nationals increased by significantly large amounts relative to refugees. Thus, the differences in the hours worked and earnings made in the first four waves widened. The authors argue that nationals and urban refugees took up more jobs, although of lower quality, as a way of coping during the pandemic. Besides, the proportion of individuals working in multiple jobs doubled during the pandemic. Work restrictions targeting refugees inclined them towards services sector. However, nationals worked in any sector they desired.

The reviewed literature indicates three things. One, labor market outcomes among refugees differ from those among nationals due to institutional setting and politics within the host community, differences in levels of human capital, and the existing labor market policies. Two, labor market outcomes are not uniform among refugees due to differences in educational attainment, gender, duration of stay within the host community, residence, and age. Three, government interventions, such as issuance of legal work permits to refugees, and matching educational attainment with employment, improves labor market outcomes among refugees while simultaneously reducing the uptake of informal employment among foreign-born workers. However, there is scanty evidence on the extent to which different coping mechanisms in response to pandemic-induced negative shocks affect labor market outcomes among displaced persons. In particular, little is known on how coping mechanisms shaped labor market outcomes among refugees in Kenya during COVID-19 pandemic.

A closely related study is Vintar et al (2022) that utilized the first five waves of COVID-19 Rapid Response Phone Surveys in Kenya. The authors analyzed how refugees fared in terms of employment, work stoppage, and labor market earnings relative to urban nationals during the pandemic. This was realized by incorporating a term that captured the refugee factor. The authors did not consider the effect of various coping mechanisms other than working multiple jobs. Coping mechanisms include: reliance on domestic and overseas remittances; selling household assets; engaging in activities that generate additional income; borrowing or receiving assistance from family, friends, and neighbors; taking up an institutional loan; purchasing on credit; reducing expenditures on non-food items; drawing down savings; receiving advance payment from employer; delaying obligations to pay bills or debts; selling agricultural harvest in advance; and reducing expenditures on food (Barron et al, 2023). Coping mechanisms such as remittances could affect labor market outcomes, especially when recipients treat them as unemployment benefits. In computing hours worked, the authors assigned zero hours to unemployed refugees, and hence underestimated average hours worked [among the employed]. This paper builds on Vintar et al (2022) by considering coping mechanisms alongside narrowing down to labor market outcomes among employed refugees.

3. Methodology

This study's methodology is based on Vintar et al (2022), Arendt (2022), World Bank (2023b), and McKenzie & Yang (2022). Vintar et al (2022) analyzed differences in labor market outcomes between nationals and refugees. The authors employed static panel to control for geographical and wave fixed effects. Our departure from Vintar et al (2022) is in the incorporation of coping actions as well as the constant term, employment of one wave as reference for wave fixed effects, and the exclusion of the term for 'nationals'. This is because our focus is explicitly on refugees, and one term is omitted from the time (wave) dummies. Arendt (2022) controls for calendar effects, and geographical variations, in analyzing labor market outcomes under two policy environments, namely; train-first, and work-first. The author considers the pre-2016 period as control, and post-2016 when work-first policy was fully operational as treatment period.

We extend this trajectory by incorporating policies that affect labor market outcomes, such as government assistance. However, we do not control for economic improvement, as in Arendt (2022), due to data needs.

World Bank (2023b) indicates that the pandemic disrupted labor markets. It is natural that individuals and households adopted various coping strategies. These strategies could potentially have affected labor market outcomes. Lastly, McKenzie & Yang (2022) discuss the estimation of refugee labor market outcomes, conditional on plausible exogeneity. The authors indicate that static panel estimation yields consistent results when plausible exogeneity assumption is not invalidated. This is also true for shift-share analysis or the difference-in-difference (D-i-D) estimator (McKenzie & Yang, 2022). Based on the aforementioned, we estimate a static panel model given by:

$$V_{k,t} = \alpha + \sum_{j=1}^{b} \theta_j t + \beta COV_{k,r,t} + \gamma Z_{k,r,t} + \varepsilon_{k,t}$$

Where V captures labor market outcome of interest for individual k in wave t. COV is a dummy variable that is assigned 1 for an individual whose household adopted coping strategy of type-r, and 0 otherwise. These coping strategies are either sustainable or unsustainable (Barron et al, 2023), as well as policy-based. Policy-based interventions include remittances and assistance from the government, non-governmental organizations, and faith-based organizations. Z is a vector of other individual attributes such as age, educational attainment, and gender. The error term ε is assumed to be white noise. A, β, θ, and γ are regression parameters. These analyses are restricted to18-64-year-old refugees.

Static panel is chosen over dynamic panel for efficiency reasons since our dataset has large cross-sections, and small time periods (i.e., T<N), and T is smaller than 20 (i.e., T=8<20). In the static panel model, a choice is made between random effects and fixed effects model based on the Hausman test (Bell et al, 2019). We conduct robustness tests using staggered difference-in-difference estimator (Callaway & Sant'Anna, 2021). The assumption is that once a household adopts a given coping action, it remains an adopter.

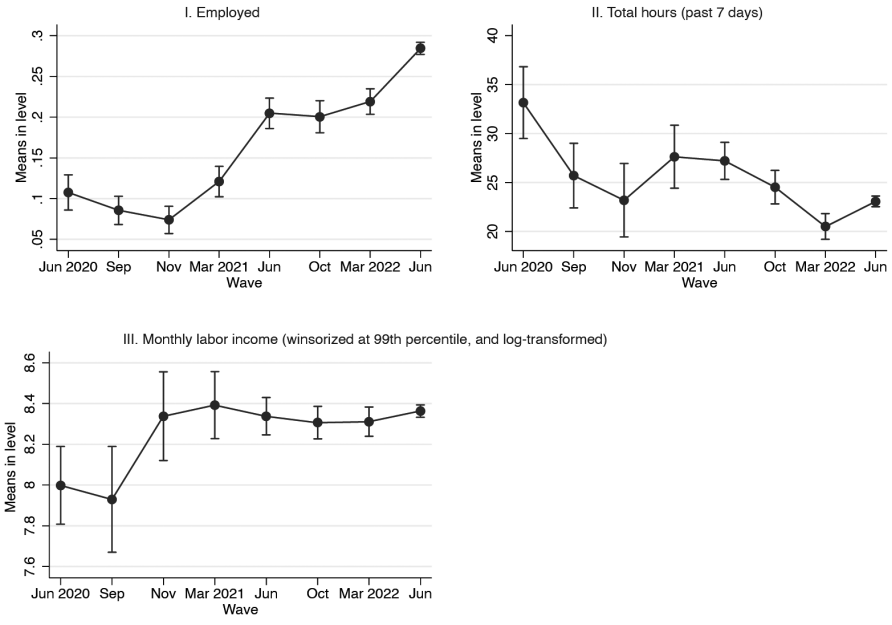
We utilize eight waves of the COVID-19 Rapid Response Phone Surveys among Refugees in Kenya dataset. These surveys were jointly conducted by the United Nations High Commission for Refugees, and the World Bank from May 2020 to June 2022. Collected data included background of the household, employment, food security, subjective welfare, and knowledge about COVID. Data on employment was captured across all waves as well as various coping actions that were adopted. A respondent's educational attainment was captured in waves 1 and 2. Information on educational attainment of other household members was captured in waves 3-5. A key development was that monitoring and tracking improved over time. This then raised quality of the data as well as increased the response rate (Vintar et al, 2022).

4. Empirical Findings

4.1 Demographics

We analyze the evolution of employment rate, hours worked, and labor earnings made during the pandemic. We control for an individual's gender, educational attainment, and age and its square, alongside gender and age of the household head, and household size. Households having fifteen or more individuals are assigned fifteen members. This is because these households had household size captured as fifteen or more. Incomes were first winsorized at 99th percentile, and log-transformed. This contrasts Vintar et al (2022) that considered household labor income per capita. The authors transformed the income using inverse hyperbolic sine transformation, and winsorized at 99th percentile. Thereafter, the authors controlled for age, gender, and educational attainment of the household head, and incorporated county fixed effects. We report margins plot after OLS estimation in Figure 3.

Figure 2: Evolution of Labor Market Outcomes among Refugees in Kenya during COVID

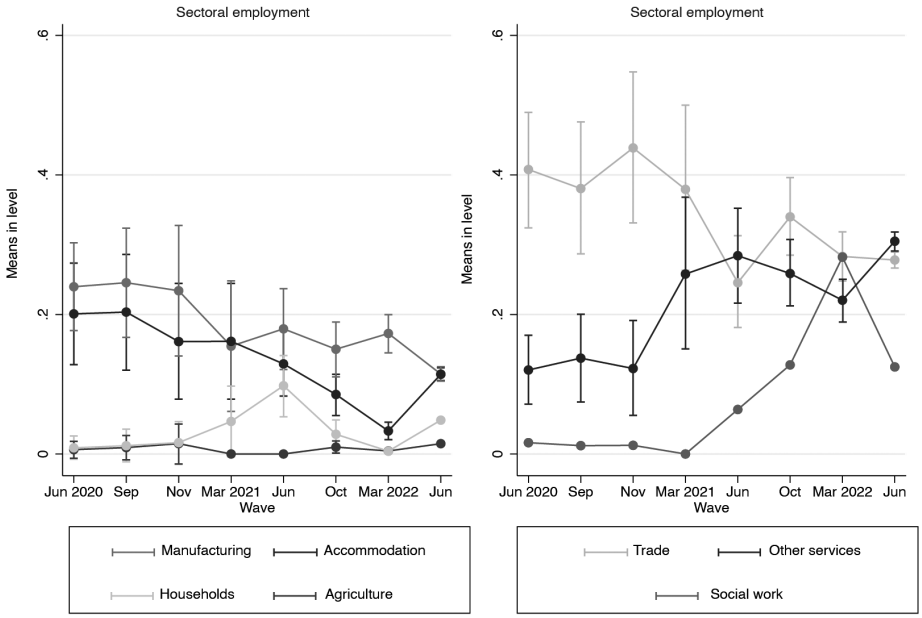


Note: The figures capture the estimated mean for refugees.

At the onset of the pandemic (May-June 2020), about one in every ten refugees was employed. This employment rate declined through waves 2 (July-September 2020) and 3 (October-November 2020) before recovering slightly in wave 4 (January-March 2021), and subsequently

rising over waves 5 (April-June 2021) to 8 (June 2022). Towards the end of the eighth wave, about 30percent of refugees were in employment. As employment rate declined across waves 1 to 3, total hours worked declined. In wave 4, hours worked rose in response to a recovery in employment rate, but declined throughout waves 5 to 7 before recovering slightly in wave 8. Hours worked at the end of the pandemic were much lower in comparison to the onset. Labor incomes declined in the first two waves but recovered in wave 3, peaked in wave 4 but slightly declined in waves 5 and 6 before rising slightly in waves 7 and 8. Incomes in waves 3 to 8 were much higher relative to the levels in waves 1 and 2.

Figure 3: Sectoral Employment of Refugees during COVID



Note: Education, human health, and social work services are captured under social work. Accommodation includes food services. Trade captures wholesale and retail services. Households refer to households as employers. Controls used are: an individual's gender, educational attainment, and age and its square, alongside gender and age of the household head, and household size.

The initial decline in employment rate among refugees in waves 1 to 3 was driven by nationwide lockdowns that severely restricted labor market access (Vintar et al, 2022). Despite employment of refugees rising in subsequent waves, it remained low. This is consistent with Vintar et al (2022) that indicate one-third of refugees being in employment. Low employment rate among refugees could be driven by workforce diversification efforts that do not consider displaced persons (Lee et al, 2020). Specifically, Kenya rolled out 'Kazi Mtaani', a casual job intervention program targeting unemployed young people during the pandemic (Onsomu et al, 2023; Madsen,

2024). The program was nevertheless designed for Kenyan nationals, and not refugees. The decline in hours worked across waves 1 to 3 is attributed to only a small share of refugees being in employment. The slight recovery in hours worked in wave 4 is attributed to labor markets being partially opened up as a result of some of lockdown restrictions being lifted. This enabled refugees to take up jobs, especially within the informal sector (Vintar et al, 2022). Since job creation was not large enough after wave 4, an increase in the employment rate meant that employed refugees worked fewer hours. Hence, total hours worked declined across waves 5 to 7. In wave 7, hours worked were lower than in wave 3 (period prior to the first recovery). This prompted a remarkable expansion in job creation leading to a rise in both employment rate, and hours worked. Lastly, rising labor incomes could be attributed to refugees working multiple jobs as well as an increase in employment rate (Vintar et al, 2022).

In terms of sectoral composition of employment, the services sector absorbed majority of employed refugees. The services sector accounted for nine in every ten refugee jobs. In Figure 4, we employ the same set of controls as in Figure 3, and employment multinomial logit. This allows us to analyze the probability of an employed refugee being in one of the seven sectors considered. Employment within agriculture sector stagnated throughout the pandemic, and was almost negligible. Manufacturing employment share declined generally.

A summary of variables of interest is captured in Table 1. We restrict analyses to individuals of ages eighteen to sixty-four years old, and disaggregate the analyses based on gender of the household head. Approximately 40percent of the respondents in male-headed households were female. This compares with 62percent in female-headed households. Female household heads were slightly older relative to male household heads although refugees in female-headed households were just as old as refugees in male-headed households, on average. About 26percent of refugees in male-headed households were either in wage employment, employed in agriculture, or working for households as employers. This contrasts with 19percent among female-headed households. Refugees in female-headed households worked about three and a half fewer hours, and earned less in comparison to those in male-headed households.

In terms of educational attainment, one in every four refugees had no formal education. Among female-headed households, 30percent of refugees had no formal education. This estimate was high relative to 21percent reported in male-headed households. Refugees in male-headed households were twice likely to have mid-level college/ university education as those in female-headed households. However, only 5.5percent of refugees had mid-level college/ university education.

We then look at coping actions adopted by refugees during the pandemic. Female-headed households were likely to have received remittances compared to male-headed households (30percent versus 21percent). About 13percent and 14percent of female-headed and male-headed households, respectively, were supported by either the government, non-governmental organizations (NGOs), or faith-based organizations (FBOs). A high proportion of male-headed households adopted coping actions that were either sustainable or unsustainable in comparison to female-headed households.

Table 1: Demographics

Household head	Male (N = 15566)	Female (N = 14106)	Total (N = 29672)
Age of the respondent in years			
Mean (SD)	30.94 (10.92)	30.87 (12.00)	30.91 (11.45)
Min, Max	18.0, 64.0	18.0, 64.0	18.0, 64.0
Household size			
Mean (SD)	5.85 (3.42)	6.52 (3.56)	6.17 (3.50)
Min, Max	1.0, 15.0	1.0, 15.0	1.0, 15.0
Income			
Mean (SD)	5307.88 (4179.15)	5218.40 (3691.04)	5271.62 (3988.38)
Min, Max	35.0, 25000.0	35.0, 25000.0	35.0, 25000.0
Ln monthly labor income			
Mean (SD)	8.34 (0.78)	8.34 (0.74)	8.34 (0.76)
Min, Max	0.0, 11.5	1.4, 11.5	0.0, 11.5
Total hours worked			
Mean (SD)	24.84 (24.96)	21.34 (23.43)	23.38 (24.39)
Min, Max	0.0, 156.0	0.0, 144.0	0.0, 156.0
Age of the household head			
Mean (SD)	38.17 (12.61)	39.43 (12.22)	38.78 (12.44)
Min, Max	18.0, 96.0	18.0, 96.0	18.0, 96.0
Wage employed or in agriculture or household enterprise			
No	11549 (74.3)	11479 (81.4)	23064 (77.7)
Yes	3990 (25.7)	2622 (18.6)	6622 (22.3)
Educational attainment			
No formal	3161 (21.3)	4033 (29.6)	7195 (25.3)
Pre-primary, primary, and post-primary vocational	5392 (36.4)	4777 (35.1)	10182 (35.8)
Secondary	5051 (34.1)	4178 (30.7)	9259 (32.5)
College and university	1082 (7.3)	471 (3.5)	1555 (5.5)
Madrassa/ Duksi	122 (0.8)	155 (1.1)	277 (1.0)
Gender of the respondent			
Male	9374 (60.5)	5389 (38.4)	14779 (50.0)
Female	6118 (39.5)	8642 (61.6)	14790 (50.0)
Sector of the enterprise			
Agriculture	47 (1.0)	57 (1.9)	104 (1.4)
Manufacturing	724 (16.2)	246 (8.2)	976 (13.1)
Households as employers	115 (2.6)	207 (6.9)	322 (4.3)
Wholesale and retail	1246 (27.8)	905 (30.3)	2151 (28.8)

Household head	Male (N = 15566)	Female (N = 14106)	Total (N = 29672)
Education, health, and social work	552 (12.3)	433 (14.5)	985 (13.2)
Accommodation and food services	282 (6.3)	524 (17.6)	806 (10.8)
Other services	1511 (33.8)	610 (20.5)	2130 (28.5)
Received remittance within or outside Kenya			
No	9232 (79.4)	7937 (70.1)	17205 (74.9)
Yes	2393 (20.6)	3383 (29.9)	5776 (25.1)
Assistance from NGO, FBO, and Govt			
Otherwise	13452 (86.4)	12349 (87.5)	25839 (86.9)
Assistance from NGO, FBO, and Govt	2114 (13.6)	1757 (12.5)	3879 (13.1)
Sustainable coping actions			
No	10219 (65.6)	10244 (72.6)	20492 (69.0)
Yes	5347 (34.4)	3862 (27.4)	9226 (31.0)
Unsustainable coping actions			
No	11619 (74.6)	11375 (80.6)	23026 (77.5)
Yes	3947 (25.4)	2731 (19.4)	6692 (22.5)

Parentheses indicate percentage unless otherwise stated; in that case, parentheses capture standard deviation (SD).

4.2 Model Estimation

In Table 2, survey wave was incorporated to capture the evolution of labor market outcomes during the pandemic. For models captured in columns (1) and (2), the Hausman test suggested explanatory variables were related to the error term. Hence, fixed effects estimator was employed. In column (5), the Hausman test suggested that explanatory variables were unrelated to the error term. As a result, random effects estimator was employed. In columns (3), (4), and (6), the Hausman matrix was not positive semi-definite. However, estimates from the fixed effects model suggested that panel-level effects were present. Accordingly, pooled OLS estimation was employed. We clustered standard errors at the strata level. These strata were seven— Kakuma, Kalobeyei, Dadaab, Shona stateless, and urban refugees alongside refugees drawn from two other samples. The two samples were: Kenya National Bureau of Statistics, and Random Digit Dialing.

Findings suggest that employment rate among refugees in waves 2, 3, and 4 was not different to the level reported in wave 1. In waves 5-8, employment rate rose relative to wave 1. In wave 5, refugees were 11percent more likely to be in employment compared to wave 1. The proportion of employed refugees rose further through subsequent waves. Towards the end of wave 8, refugees' employment was about 26percent higher compared to the level in wave 1.

Hours worked in a week differed across the survey waves. In waves 2-8, refugees worked between six to eleven hours a week fewer compared to wave 1. When coping actions are controlled for, hours worked differed from the first four waves in waves 6 and 7.

Average earnings were comparably similar in waves 1-3 but rose significantly in waves 4-8. These earnings were 24-35percent higher in waves 4-8 compared to wave 1. When controlled for coping actions, there were no significant differences in labor earnings across the waves.

Table 2: Main results

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	s1	s2	pooled	pooled	re	pooled
Wave:	employed	employed	total_hours	total_hours	lnearnings	lnearnings
2	0.0196		-7.102**		-0.0843	
	(0.0156)		(2.336)		(0.121)	
3	-0.00725		-9.907***		0.238*	
	(0.0166)		(0.533)		(0.129)	
4	0.0287*		-6.400**		0.297**	
	(0.0169)		(2.416)		(0.116)	
5	0.112***	0.0982***	-6.336**	-0.199	0.256**	-0.0269
	(0.0162)	(0.0186)	(1.952)	(1.593)	(0.101)	(0.128)
6	0.170***	0.169***	-8.583**	-3.467**	0.249**	-0.0325
	(0.0179)	(0.0287)	(2.471)	(1.223)	(0.104)	(0.139)
7	0.195***	0.177***	-11.31***	-6.041***	0.211**	-0.00311
	(0.0174)	(0.0211)	(2.462)	(0.862)	(0.101)	(0.141)
8	0.257***	0.290***	-7.944**	-1.141	0.293***	-0.141
	(0.0142)	(0.0212)	(2.299)	(3.729)	(0.0934)	(0.108)
Age	0.0532***	0.0967***	2.879***	2.950***	0.0137	0.00449
	(0.0147)	(0.0235)	(0.206)	(0.246)	(0.0151)	(0.00844)
Age sq.	-0.000665***	-0.00127***	-0.0330***	-0.0339***	-0.000160	-4.03e-05
	(0.000196)	(0.000312)	(0.00378)	(0.00408)	(0.000196)	(0.000102)
Gender	-0.0124	0.0659	-11.82***	-14.10***	-0.308*	-0.423*
	(0.160)	(0.205)	(1.329)	(0.477)	(0.180)	(0.186)
Education:						
Primary	0.0737***	0.0679**	4.462**	3.498**	0.0592	0.0972
	(0.0233)	(0.0334)	(1.223)	(1.335)	(0.0802)	(0.0725)
Secondary	0.0882***	0.0680*	2.343	0.387	-0.00537	0.0182
	(0.0247)	(0.0357)	(2.071)	(2.565)	(0.0818)	(0.0940)
College	0.116***	0.0977*	2.983*	2.328	0.212**	0.229***

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	s1	s2	pooled	pooled	re	pooled
	(0.0362)	(0.0533)	(1.384)	(2.831)	(0.106)	(0.0573)
Other	-0.0383	0.222*	-4.905	-2.784	0.315	0.156
	(0.0647)	(0.118)	(4.934)	(6.395)	(0.294)	(0.0942)
Gender*primary	-0.0559	-0.0562	-2.411	0.641	-0.0133	0.211
	(0.0385)	(0.0549)	(1.923)	(2.231)	(0.213)	(0.221)
Gender*secondary	-0.0605	-0.0705	0.178	4.392	0.339	0.466
	(0.0447)	(0.0635)	(1.188)	(2.685)	(0.228)	(0.260)
Gender*college	-0.104	-0.0187	1.622	4.718	0.548	0.886**
	(0.0826)	(0.129)	(2.425)	(3.391)	(0.346)	(0.313)
Gender*other	-0.0250	-0.292	-3.200	-3.995	-0.472	0.289
	(0.138)	(0.199)	(6.890)	(8.309)	(0.646)	(0.264)
HH gender	0.0313	0.0663	0.471	-0.609	0.142	0.0470
	(0.0428)	(0.0670)	(3.258)	(3.142)	(0.161)	(0.157)
Gender*HH gender	-0.0356	-0.0459	5.456*	7.609**	0.0546	0.170
	(0.0490)	(0.0744)	(2.370)	(2.827)	(0.233)	(0.289)
Primary*HH gender	-0.0407	-0.0777	-4.029	-5.100	-0.117	-0.0758
	(0.0425)	(0.0603)	(2.541)	(2.781)	(0.180)	(0.149)
Secondary*HH gender	-0.0380	-0.0519	-4.888	-5.070	-0.230	-0.0832
	(0.0436)	(0.0618)	(3.458)	(3.577)	(0.178)	(0.254)
College*HH gender	0.0443	0.0618	-0.397	-2.358	-0.133	-0.0169
	(0.0703)	(0.0974)	(4.091)	(3.926)	(0.246)	(0.308)
Other*HH gender	0.0298	-0.0945	31.52**	29.57**	0.436	0.764
	(0.131)	(0.207)	(10.18)	(11.34)	(0.578)	(0.424)
Gender*primary*HH gender	0.0439	0.0319	7.396*	3.896	0.0611	-0.221
	(0.0549)	(0.0790)	(3.159)	(4.557)	(0.281)	(0.301)
Gender*secondary*HH gender	0.0494	0.0663	6.296	3.328	0.0684	-0.142
	(0.0612)	(0.0877)	(5.071)	(5.485)	(0.295)	(0.395)
Gender*college*HH gender	0.0108	-0.0882	-0.540	-0.513	-0.382	-0.869
	(0.112)	(0.166)	(3.972)	(3.782)	(0.443)	(0.598)
Gender*other*HH gender	-0.00823	0.135	-6.571	0.0631		

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	s1	s2	pooled	pooled	re	pooled
	(0.184)	(0.282)	(12.83)	(11.60)		
Household size	0.0245***	0.0160	-2.300***	-2.381***	-0.0738***	-0.0596**
	(0.00672)	(0.0102)	(0.282)	(0.165)	(0.0222)	(0.0226)
Size sq.	-0.00118***	-0.000564	0.0770**	0.0795**	0.00333*	0.00282
	(0.000445)	(0.000668)	(0.0277)	(0.0241)	(0.00172)	(0.00166)
HH gender*size	-0.00426	-0.00819	-0.175	-0.0192	0.00407	0.00209
	(0.00334)	(0.00529)	(0.216)	(0.198)	(0.0134)	(0.00883)
HH age	0.00493	-0.000908	-0.929***	-0.848***	-0.00880	0.00133
	(0.00350)	(0.00570)	(0.165)	(0.154)	(0.0111)	(0.00560)
HH age sq.	-6.58e-05	-1.24e-05	0.00969***	0.00874***	0.000124	-9.11e-06
	(4.37e-05)	(7.20e-05)	(0.00153)	(0.00171)	(0.000126)	(6.82e-05)
Remittance		0.00475		1.489		0.241***
		(0.0286)		(1.648)		(0.0603)
HH gender*remittance		-0.0301		0.0289		0.133
		(0.0386)		(1.328)		(0.0947)
Sustainable actions		0.0272		1.073		0.239*
		(0.0293)		(3.431)		(0.103)
HH gender* sustainable		0.0584		-3.889		-0.178
		(0.0390)		(2.760)		(0.121)
Remittance*sustainable		-0.0425		-14.17***		-0.374
		(0.0655)		(1.939)		(0.212)
HH gender*remittance*sustainable		-0.0994		17.79***		0.299
		(0.0880)		(2.978)		(0.179)
Unsustainable actions		-0.0255		-0.920		0.0551
		(0.0661)		(2.585)		(0.125)
HH gender*unsustainable		0.0552		0.147		-0.250
		(0.0988)		(6.410)		(0.258)
Remittance*unsustainable		0.830*		3.374		-0.205
		(0.502)		(17.58)		(0.168)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	s1	s2	pooled	pooled	re	pooled
HH gender*remittance*unsustainable		-0.640		-15.01		-0.373
		(0.540)		(15.05)		(0.242)
Sustainable*unsustainable		0.0269		2.914		-0.660***
		(0.0719)		(1.805)		(0.172)
HH gender*sustainable*unsustainable		-0.104		4.373		0.681
		(0.107)		(7.023)		(0.378)
Remittance*sustainable*unsustainable		-0.762		5.713		0.738**
		(0.508)		(17.63)		(0.301)
HH gender*remittance*sustainable*unsustainable		0.703		4.920		-0.366
		(0.549)		(17.70)		(0.262)
Constant	-1.037***	-1.621***	10.94	2.581	8.138***	8.414***
	(0.263)	(0.413)	(6.283)	(4.713)	(0.303)	(0.159)
Observations	13,257	8,408	3,890	3,042	1,888	1,490
R-squared	0.110	0.113	0.203	0.213		0.095
Number of IDs	5,560	4,926			1,292	

Parentheses capture standard errors.

***, **, and * indicate significance at 1, 5, and 10percent levels, respectively.

Gender is assigned 1 for female, and 0 otherwise. Individuals without formal education form the reference group for educational attainment. Other educational attainment refers to Duksi/ madrassa. Remittances equal 1 for domestic and overseas remittances, and 0 otherwise. Coping actions are categorized into sustainable or unsustainable following Barron et al (2023). Sustainable coping strategies involve asset sale, engaging in additional income generating activities, assistance from close ties (family, friends, and neighbors), borrowing from close ties, taking up an institutional loan, credit purchase, reducing nonfood consumption spending, relying on savings, and advancing payment from employer. Unsustainable coping strategies include delaying payment obligations, advance harvest sale, and reducing food consumption spending.

Our second objective entails the incorporation of gender, age, and educational attainment into the model. Older refugees were likelier to be employed, and worked more hours in a week compared to younger refugees. Employment rate and hours worked did not rise indefinitely. Employment rate declined after 38-40years whereas hours worked declined after 43-44years. Age insignificantly affected labor incomes. Females were just likely to be employed as males. However, females worked 12-14hours in a week fewer compared to males. Compared to refugees without formal education, refugees with primary school, secondary school, or college/ university education were 7percent, 9percent, and 12percent, respectively, more likely to be employed. Hours worked were much higher among refugees with primary school education compared to

those with no formal training. There were no significant differences in hours worked among refugees without formal training, and those with either secondary school or college/ university education. Refugees with primary or secondary school education earned just as much as those without formal training. Labor earnings among refugees with college/ university education were about 24percent higher relative to earnings among refugees without formal education. This estimate rose to 26percent when controlled for coping actions.

We then interact gender and educational attainment. For the same level of education, there are no significant differences in employment rate, hours worked, or income between male and female refugees. When controlled for coping actions, females with college/ university education earned about 143percent more compared to males with the same level of education.

Our final objective focuses on coping actions/ interventions. These coping actions fall under two broad categories; endogenous (adopted by refugee households), and exogenous (without the input of refugee households). Endogenous interventions were either unsustainable or sustainable coping strategies (Barron et al, 2023). Exogenous interventions involved remittances and assistance from the government, non-governmental organizations, and faith-based organizations.

The findings suggest that refugees from households that received remittances were just as likely to be employed, and worked the same number of hours, as refugees from households that did not receive remittances. However, recipients of remittance earned 27percent more compared to non-recipients. Sustainable or unsustainable coping actions insignificantly affected employment rate, hours worked, and labor income.

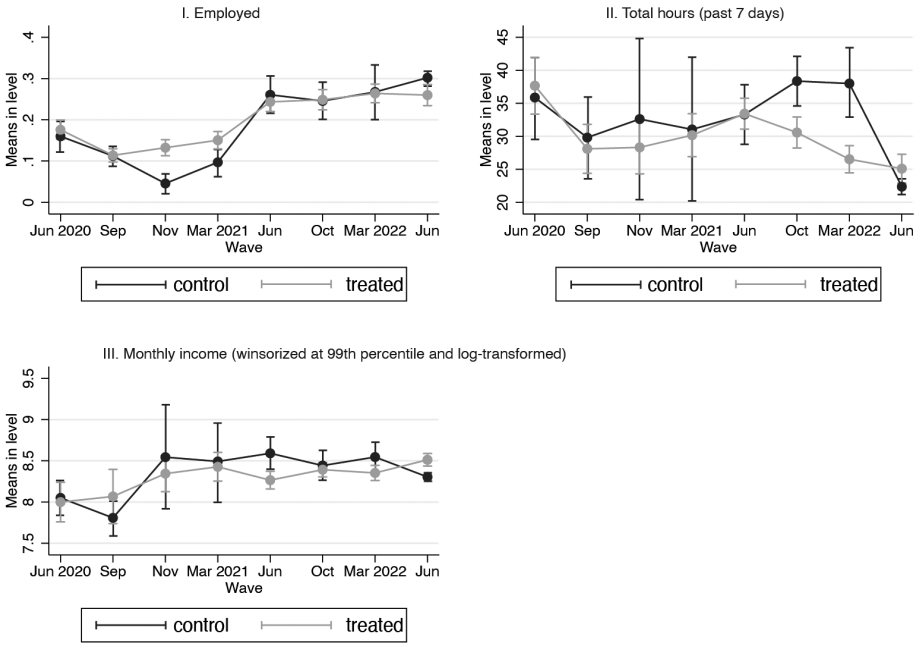
Interaction effects suggested that refugees from households that received remittance, and adopted sustainable coping actions worked 14hours a week fewer in comparison to adopters of sustainable coping actions but nonrecipients of remittance or remittance recipients but non-adopters of sustainable coping actions. Adopters of both sustainable and unsustainable coping actions earned about 48percent less compared to non-adopters.

4.2.1 Robustness Check

In checking the robustness of the results, we employ staggered difference-in-difference estimator (Callaway & Sant'Anna, 2021). Households adopted coping actions at different times covered in the survey. Besides, not all households adopted coping actions. We assign individuals to the treated group if their respective households adopted any coping action (i.e., either received remittances, assistance from the government/ non-governmental organizations/ faith-based organizations, or fell back on sustainable/ unsustainable coping actions); otherwise, the individual was assigned to the control group. For the baseline, we regress each of the three labor market outcomes against the treatment, wave, and interaction between treatment and wave. We then compute margins, and visualize the output in Figure 4. Adopters of coping actions were

likelier to be employed in waves 3 and 4 compared to non-adopters. In the other waves, adopters were just as likely to be employed as non-adopters. In general, adopters worked fewer hours, and had lower labor incomes, compared to non-adopters.

Figure 4: Baseline D-i-D Regression



Having established that adopters of any coping actions were less likely to be in paid employment, worked fewer hours, and earned less compared to non-adopters, we incorporate the full set of controls employed in Table 2. In the staggered D-i-D, standard errors are clustered at the individual level. Coping actions are controlled for in even columns in Table 3. Without controlling for specific coping actions, adopters were about 8percent and 13percent likelier to be employed compared to non-adopters in waves 3 and 4. There were no significant differences in hours worked between adopters and non-adopters across the waves.

Table 3: Staggered D-i-D results

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	employed	employed	total_hours	total_hours	lnearnings	lnearnings
Treated	-0.0222	0.142***	4.141	-25.13***	0.470*	-0.627
	(0.0259)	(0.0515)	(5.257)	(9.306)	(0.278)	(0.661)
Treated*wave 2	0.00857		2.795		-0.185	
	(0.0325)		(7.202)		(0.509)	

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	employed	employed	total_hours	total_hours	lnearnings	lnearnings
Treated*wave 3	0.0833**		-17.92*		-0.554	
	(0.0366)		(10.62)		(0.403)	
Treated*wave 4	0.131***		-13.83		-0.889	
	(0.0387)		(9.272)		(0.726)	
Treated*wave 5	0.0208	-0.146***	-0.968	11.30	-0.462	0.683
	(0.0381)	(0.0512)	(6.798)	(10.000)	(0.338)	(0.667)
Treated*wave 6	0.00935	-0.153**	-8.150	5.356	-0.397	0.733
	(0.0374)	(0.0615)	(6.367)	(9.987)	(0.306)	(0.705)
Treated*wave 7	0.0245	-0.177***	-12.01*	2.487	-0.517*	0.619
	(0.0445)	(0.0550)	(6.991)	(9.925)	(0.302)	(0.657)
Treated*wave 8	-0.00754	-0.207***	1.110	9.235	-0.323	0.708
	(0.0319)	(0.0575)	(6.155)	(10.64)	(0.313)	(0.640)
Age	0.0788***	0.129***	-5.597**	-5.507*	0.0727	0.0331
	(0.0175)	(0.0304)	(2.576)	(2.950)	(0.106)	(0.108)
Age sq.	-0.000973***	-0.00170***	0.0767**	0.0621	-0.00131	-0.000990
	(0.000229)	(0.000412)	(0.0352)	(0.0417)	(0.00139)	(0.00146)
Gender	0.0753	0.0752	-31.09**	-36.89**	-0.907*	-0.473
	(0.121)	(0.133)	(13.60)	(15.24)	(0.535)	(0.714)
Primary	0.0907***	0.0577	5.728**	3.930	0.161	0.118
	(0.0280)	(0.0394)	(2.724)	(3.269)	(0.126)	(0.160)
Secondary	0.0986***	0.0299	2.545	-1.815	0.122	-0.0178
	(0.0298)	(0.0407)	(2.884)	(3.745)	(0.118)	(0.150)
College	0.0954**	0.0435	-0.646	2.735	0.287*	0.131
	(0.0448)	(0.0616)	(3.954)	(5.374)	(0.163)	(0.206)
Other	-0.0757	0.0865	-9.817	-5.375	0.932**	0.615**
	(0.0687)	(0.149)	(10.86)	(13.74)	(0.401)	(0.264)
Gender*primary	-0.0451	-0.00935	2.122	4.727	0.282	0.0117
	(0.0375)	(0.0514)	(6.742)	(7.551)	(0.319)	(0.434)
Gender*secondary	-0.0499	0.000537	2.988	8.647	0.344	0.347
	(0.0439)	(0.0565)	(7.894)	(9.513)	(0.240)	(0.340)
Gender*college	-0.135	-0.0680	-1.985	-2.628	0.0212	-0.0829
	(0.0845)	(0.123)	(15.31)	(16.95)	(0.441)	(0.508)
Gender*other	-0.0107	-0.147	10.99	-27.13***	-0.392	
	(0.0837)	(0.161)	(23.16)	(9.552)	(0.639)	
HH gender	0.00896	0.0113	11.12	13.62	-0.174	-0.469
	(0.0431)	(0.0652)	(8.211)	(9.447)	(0.362)	(0.418)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	employed	employed	total_hours	total_hours	lnearnings	lnearnings
Gender*HH gender	0.00630	0.0282	-1.204	-5.078	0.702*	0.891*
	(0.0486)	(0.0703)	(10.05)	(11.73)	(0.417)	(0.462)
Primary*HH gender	-0.0136	-0.0143	-12.99	-22.90**	-0.471	0.461
	(0.0466)	(0.0629)	(8.876)	(10.07)	(0.441)	(0.527)
Secondary*HH gender	-0.0208	0.0115	-7.316	-10.57	-0.264	-0.0980
	(0.0461)	(0.0609)	(8.719)	(10.95)	(0.338)	(0.396)
College*HH gender	0.0573	0.0743	-11.60	-17.67*	-0.0215	0.512
	(0.0694)	(0.0885)	(8.675)	(10.67)	(0.385)	(0.439)
Other*HH gender	0.143	0.122	12.90	34.95**	-0.668	-0.180
	(0.152)	(0.217)	(24.81)	(15.46)	(0.451)	(0.479)
Gender*primary*HH gender	-0.0120	-0.0655	1.849	8.522	-0.261	-0.939
	(0.0554)	(0.0759)	(11.04)	(12.81)	(0.550)	(0.696)
Gender*secondary*HH gender	0.000598	-0.0279	-3.748	0.261	-0.211	-0.423
	(0.0597)	(0.0794)	(12.00)	(14.49)	(0.423)	(0.545)
Gender*college*HH gender	-0.0537	-0.0607	5.169	-2.889	-0.394	-0.640
	(0.111)	(0.156)	(16.17)	(17.77)	(0.474)	(0.620)
Gender*other*HH gender	-0.0811	-0.0244				
	(0.165)	(0.244)				
Household size	0.0240***	0.0116	1.911*	2.509*	-0.168***	-0.147*
	(0.00695)	(0.00973)	(1.062)	(1.472)	(0.0561)	(0.0860)
Size sq.	-0.00119***	-0.000414	-0.105	-0.142	0.0129***	0.0105
	(0.000427)	(0.000587)	(0.0740)	(0.104)	(0.00423)	(0.00712)
HH gender*size	-0.00500	-0.00979**	-0.861	-0.505	0.0153	0.00433
	(0.00322)	(0.00489)	(0.576)	(0.815)	(0.0295)	(0.0458)
HH age	0.000213	-0.00842	0.794	-0.680	-0.0571	-0.0653
	(0.00307)	(0.00524)	(0.710)	(0.818)	(0.0520)	(0.0412)
HH age sq.	-3.74e-06	9.60e-05	-0.00830	0.00795	0.000810	0.00110**
	(3.86e-05)	(6.65e-05)	(0.00834)	(0.00960)	(0.000675)	(0.000532)
Remittance		0.0211		20.36***		0.101
		(0.0527)		(5.998)		(0.217)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	employed	employed	total_hours	total_hours	lnearnings	lnearnings
HH gender*remittance		0.00537		0.244		0.0859
		(0.0383)		(5.689)		(0.212)
Sustainable actions		-0.00987		16.47***		0.264
		(0.0446)		(5.497)		(0.185)
HH gender* sustainable		0.0413		-2.865		-0.381*
		(0.0412)		(5.103)		(0.203)
Remittance*sustainable		-0.0401		-31.93***		-0.456
		(0.0854)		(10.57)		(0.310)
HH gender*remittance*sustainable		-0.146		17.14		0.839*
		(0.0921)		(12.73)		(0.460)
Unsustainable actions		-0.0115		19.70**		0.363
		(0.0778)		(7.884)		(0.287)
HH gender*unsustainable		-0.00945		-4.232		-0.0464
		(0.0960)		(12.59)		(0.432)
Remittance*unsustainable		0.893***		-17.41		-0.165
		(0.0988)		(19.33)		(0.697)
HH gender*remittance*unsustainable		-0.659***		-10.96		-0.875**
		(0.151)		(13.06)		(0.431)
Sustainable*unsustainable		0.0199		-18.79**		-0.952***
		(0.0827)		(8.478)		(0.306)
HH gender*sustainable*unsustainable		-0.0240		9.250		0.405
		(0.106)		(13.29)		(0.447)
Remittance*sustainable*unsustainable		-0.833***		28.62*		0.939
		(0.125)		(17.04)		(0.655)
HH gender*remittance*sustainable*unsustainable		0.738***				

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	employed	employed	total_hours	total_hours	lnearnings	lnearnings
		(0.178)				
Constant	-1.350***	-1.815***	116.1**	164.6***	8.801***	9.719***
	(0.321)	(0.539)	(51.27)	(56.26)	(1.911)	(2.100)
Observations	11,787	6,162	2,021	1,148	1,020	641
R-squared	0.579	0.658	0.559	0.618	0.582	0.636

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Gender is assigned 1 for female, and 0 otherwise. Individuals without formal education form the reference group for educational attainment. Other educational attainment refers to Duksi/ madrassa. Remittances equal 1 for domestic and overseas remittances, and 0 otherwise. Coping actions are categorized into sustainable or unsustainable following Barron et al (2023). Sustainable coping strategies involve asset sale, engaging in additional income generating activities, assistance from close ties (family, friends, and neighbors), borrowing from close ties, taking up an institutional loan, credit purchase, reducing nonfood consumption spending, relying on savings, and advancing payment from employer. Unsustainable coping strategies include delaying payment obligations, advance harvest sale, and reducing food consumption spending.

When controlled for specific coping actions, adopters were about 15-21percent less likely to be employed in waves 5-8 in comparison to non-adopters. There were significant differences in hours worked, and labor income, between adopters and non-adopters. In terms of the other control variables, coefficients have the same sign as corresponding estimates in Table 2. However, there are slight differences in magnitudes reported in Table 2 and Table 3. This suggests that the results are robust.

4.2.2 Discussion of Results

We analyzed labor market outcomes among displaced persons by narrowing down on refugees in Kenya. These outcomes were the likelihood of being employed, hours worked, and labor income. The analyses involved the evolution of labor market outcomes across eight waves of COVID-19 pandemic. We controlled for an individual's gender, educational attainment, and age and its square, alongside gender and age of the household head, and household size. In the regression analysis, we estimated static panel model with and without coping actions/ interventions. Coping actions included receiving remittances, assistance from the government/ non-governmental organizations/ faith-based organizations, and sustainable or unsustainable coping actions. Robustness was analyzed in a staggered difference-in-difference model. Individuals were assigned to the treated group if their households adopted any coping action, and to the control group if otherwise.

The results indicated employment of refugees in waves 2-4 being similar to wave 1. In waves 5-8, employment rate among refugees rose significantly relative to the level in wave 1. Imposition of lockdown measures by the government of Kenya in March 2020 contracted the labor market (UNHCR & World Bank, 2021). As a result, some of the employed refugees lost jobs at the onset of the pandemic. Restriction of movement in turn meant that refugees could not go to where

economic opportunities such as jobs were (Schuettler & Caron, 2020). Lockdown further meant that refugees could not be used as employment buffers. This contrasts with Hoseini & Dideh (2022) that indicate Afghan refugees in Iran being used as buffers during economic turmoil. As work and movement restrictions were lessened/ lifted, refugees sought and found employment. This coincided with greater uptake of low-quality jobs, and working multiple jobs (Vintar et al, 2022). Besides, refugees fell back on informal employment (Bhagat, 2020) given cutbacks on aid-financing (World Bank, 2023b). Relatedly, average hours worked declined in waves 2-8 relative to wave 1. This suggests that hours worked did not recover fully throughout the pandemic. Thus, employment rate rose whereas each employed refugee worked less hours compared to wave 1. Many employed refugees receive incentive wages that are quite low (Betts et al, 2018; Omata, 2021). Other employed refugees, that do not receive incentive wages, also have low labor incomes relative to natives (Pinedo-Caro, 2020; Oliviera et al, 2021; Baum et al, 2020; Morrar & Rios-Avila, 2020). It could be that low wages disincentivized refugees from working over long durations. Besides, labor incomes did not differ materially across survey waves when controlling for coping actions.

Female refugees were just as likely to be employed, but worked fewer hours compared to males. This finding disagrees with Brell et al (2020) and the International Finance Corporation (IFC, 2018) that document low employment rate among female refugees relative to male refugees. IFC (2018) indicates employment disparity in Kakuma town, Kenya, being driven by cultural norms that undermined labor market participation among female refugees. Our finding supports Arendt (2022) that documents hours worked only rising among male refugees in Denmark as a result of the work-first policy while remaining unaffected among female refugees.

Educated refugees were likelier to be employed compared to counterparts without any formal education. This is in tandem with Hallaq (2019), Demirci & Kirdar (2023), and Alix-Garcia et al (2018). Demirci & Kirdar (2023) indicate education raising the likelihood of Syrian refugees being employed in Turkey. Hallaq (2019) argues that education offered a pedestal for refugees in Gaza to access Israeli labor market. In Kenya, Alix-Garcia et al (2018) reveal that refugees with secondary education were twice as likely to be employed as their counterparts with lower educational attainments. This suggests that a strong match existed between educated refugees and available job vacancies (World Bank, 2023b). Furthermore, educated refugees could be more effective in searching for jobs, e.g., by leveraging their networks (Meyer et al, 2020) compared to their counterparts without formal training. Besides, educated refugees embody human capital that could be tapped (Lenner & Turner, 2019). This includes taking up 'incentive jobs' that are reserved for educated refugees within the camp. Refugees without formal training are also likely to be inexperienced. This could then discourage employers from hiring refugees with no formal training (Demirci & Kirdar, 2023).

Refugees with primary school education worked longer durations compared to counterparts without formal education. In terms of labor income, earnings were high among college/ university graduates compared to refugees without formal education. Similar results were arrived at in Morrar & Rios-Avila (2020) that indicate a year of schooling raising incomes among refugees

in the 50th and 90th quintiles in Palestine. For the same level of education, labor market outcomes did not differ significantly between male and female refugees. When controlled for coping actions, labor income among female college/ university graduates more than doubled earnings among males with the same level of education.

Employment rate and hours worked rose but at a decreasing rate in age up to 56-62years. Since older refugees are likely more experienced (Demirci & Kirdar, 2023), they find jobs easily, and maneuver around employment in working multiple jobs. Some of the older refugees had been in the country longer compared to younger ones. Hence, older refugees were able to forge networks with locals over extended periods of time (Brell et al, 2020). This in turn enabled older refugees to easily find jobs compared to younger counterparts. Towards age 56-62years, refugees, like every other worker, are closer to retirement. As a result, employment rate declines. Hours worked also decline because employed refugees start living off their savings.

Interaction effects suggested that refugees from households that received remittance, and adopted sustainable coping actions worked fewer hours in comparison to adopters of sustainable coping actions but nonrecipients of remittance or remittance recipients but non-adopters of sustainable coping actions. Remittances and other forms of assistance aim at addressing financial depravation (Warnaar & Bilgili, 2021). It could be that remittances and sustainable coping actions jointly raised reservation wages, and thereby reduced labor supply among refugees (Murakami et al, 2021). Adopters of both sustainable and unsustainable coping actions had lower incomes compared to non-adopters. This is because refugees relying on both sustainable and unsustainable coping strategies were likelier to live off the margin. In the robustness test, we showed that, when controlling for specific coping actions, adopters were less likely to be employed in waves 5-8 in comparison to non-adopters. There were significant differences in hours worked, and labor income, between adopters and non-adopters.

5. Conclusion

This paper analyzed employment rate, hours worked, and labor income among refugees in Kenya. This was realized through an analysis of the evolution of labor market outcomes across the eight COVID-19 pandemic waves. Two broad sets of explanatory variables were incorporated in the analysis. The first set considered age, gender, and diversity with diversity being proxied by educational attainment. The second set involved four coping actions/interventions— unsustainable and sustainable coping actions, receiving remittances, and assistance from the government, non-governmental organizations, and faith-based organizations.

Overall, labor market outcomes among refugees evolved during the pandemic. Specifically, the following was evident:

i. Employment rate among refugees rose in waves 5-8 compared to the first four waves of the pandemic. Hours worked declined on average in waves 2-8 compared to wave 1.

ii. Female refugees were just as likely to be employed, but worked fewer hours compared to males. Educated refugees were likelier to be employed compared to counterparts without any formal education. Earnings were high among college/ university graduates compared to refugees without formal education. For the same level of education, labor market outcomes did not differ significantly between male and female refugees. When controlled for coping actions, labor income among female college/ university graduates more than doubled earnings among males with the same level of education.
iii. When controlling for specific coping actions, adopters were less likely to be employed in waves 5-8 in comparison to non-adopters. There were significant differences in hours worked, and labor income, between adopters and non-adopters.

6. Recommendations

From the findings of the research, the following recommendations are highlighted as follows:

i. Job interventions targeting refugees ought to be created. These include assistance in job search efforts during normal periods, and job-specific training during pandemics. This could be further reinforced by the inclusion of refugees in efforts to diversify the workforce.
ii. Social protection programs such as financial assistance from the government, and remittances ought to be properly targeted. This is to ensure that benefits accrued from such programs do not disincentivize work. Similarly, there is need to expand programs targeting access to formal education among refugees. This will in turn raise refugees' human capital, and foster their employability.

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