A sectoral analysis of Trade openness and Women employment in selected East African Countries

Edna Muthoka & Dr. James Maingi

Abstract

Tanzania, Uganda and Kenya improved their trade openness by 26 and 8 points, respectively, between 1995 and 1998 as a percentage of these countries' gross domestic product. percent from 1998 to 2008. East African Community employment is dominated by agriculture, which motivated this study. Generally, this study pursued an analysis of openness of trade and women employment in selected EAC countries. The study examined the impact of openness of trade on both agriculture and service sector employment of women. In particular, the purpose of this study was to investigate how trade opening affects the employment of women in the agricultural sector in some EAC counties. and explore how trade opening affects the employment of women in the service sector in some counties of the EAC. The results show that trade opening had a negative impact on women's employment in the agricultural sector, but had a positive impact on the service sector. This implies trade openness has shifted female employment pattern from agriculture to services sector. The study was conducted using a longitudinal panel design. The study concludes that efforts should be made to retain female workers in agriculture by retraining them, while promoting their employment through trade facilitation services and support with marketing. Concerning agricultural sector, the study recommends retraining of female workers in the agricultural sector to improve their skills set as well as providing credit to enable them move from lower cadre employment in agriculture.

About Author (s)

Edna Muthoka (Corresponding author), Masters student, School of Business, Economics and Tourism, Kenyatta University, Nairobi, Kenya.
Dr. James Maingi, Lecturer, Department of Applied Economics, School of Business, Economics and Tourism, Kenyatta University, Nairobi, Kenya.

1.1 Introduction

Over the past few decades, discussions about development policy have become more gender-focused. Gender-sensitive development projects and policies are linked to effective, equitable, and long-term outcomes, according to increasing research and experience. It has been found that neither national policy makers nor funders have incorporated these lessons learned or connections properly (Artecona & Cunkham, 2002). The number of professions and occupations in which women have made significant progress has grown dramatically. The formal sector accounts for the majority of their economic contribution in wealthy nations, whereas the unofficial sector accounts for the majority in poor nations. Khalid (2013) points out that women are still experiencing high unemployment despite being a crucial part of the global economy.

The connection between trade openness and inequality can be understood based on three factors. Considering trade openness and economic growth together, we can gain a better understanding of how trade affects absolute poverty. A reasonable assumption would be that openness increases economic growth if we believe it lowers absolute poverty while not affecting income distribution. Secondly, it allows us to assess the likelihood that policies promoting transparency will be implemented as intended. In societies where the costs are concentrated on particular groups and the benefits are widely dispersed, trade liberalization is less likely to be accepted, especially for groups with active political or vocal profiles. As a result, it provides more information about the impact of openness on household and individual wellbeing. In addition, a great deal of research shows that people are concerned about their income and consumption, both relative and absolute.

The ease with which services and products are brought into and exported from a nation, as well as the cost at which they do so, can be defined as trade openness. It is now well documented that most developed economies follow this standard to improve trade openness. There has been much debate among academics and politicians about some of the ramifications of this trend. An important aspect of this study is how this will affect income gaps within countries.

1.2 Trade Openness and Inequality

Those countries with relatively abundant resources, including labor, may be more likely to experience a rise in output, according to (Leamer, 1995). Stolper-Samuelson theory contends that the most plentiful item should be priced higher in Mexico, where unskilled and semiskilled workers outnumber skilled workers. Due to the underrepresentation of women in skilled and semiskilled occupations, it may narrow the income gap between workers. Various agents, such as consumers and producers, engage in discriminatory practices according to Becker's taste theory (1971). It is common for people to act as if they have the cash on hand in order to avoid doing business with specific groups because doing so is psychologically or emotionally taxing. Artecona and Cunningham (2002) hypothesize that trade liberalization will reduce the gender wage gap among Mexican companies since it can abolish the differential pay that they make for men and women with the same skills. Choosing male employees over female employees will increase the cost of doing business since they will receive higher compensation than their marginal productivity.

Trade openness affects wage discrepancies between unskilled and skilled labor when average skill levels differ between men and women, and therefore, income disparities between men and women. The 'remaining' gender pay gap, that is, the percentage of the pay gap that remains after accounting for the measured skill gap between men and women, may also be affected. Women's labor demand in industrializing nations has risen in proportion to the

increase in trade goods, for example. Female workers are perceived by exporting companies as less likely to demand better pay and/or working conditions than male workers completing industrial tasks that are considered light and necessary to produce clothing, footwear, and basic electronics from developing countries.

Women will join the workforce and be able to make more money than men in either case if there is greater openness. In addition, increased trade liberalization should enhance competition in product markets, thus reducing wage gaps between men and women resulting from discrimination (Becker, 1971). However, the opposite effect can occur. First, by reducing women's leisure time, they may be able to compensate for their improved salaries and job prospects, both individually and in comparison, to men. Furthermore, if export activity is dominated by agriculture (Fontana, Joekes, & Masika, 1998), women may not immediately reap the benefits of more trade openness because they have limited access to marketing channels, inputs, and credit, as well as limited property rights in land. Consequently, trade openness tends to have mixed effects in practice when it comes to gender inequality. Land and other forms of productive property access for women depends mostly on exports of the country. Over the past few decades, one of the most notable global trends has been the increase in female labor market participation. In spite of the general recognition that this is a positive trend, many people disagree as to what caused it, although many agree that it could lead to women becoming more economically independent and reducing costs associated with underutilizing women's capabilities and labor (Cooray et al., 2017).

The distribution of globalization's effects has been studied in rich countries, developing countries, rural areas, and on workers. Globalization may affect male and female workers differently. However, less research has been done on this question. World Bank 2001 reports that the gender wage gap remains large in 61 nations, ranging from 23 percent for industrialized nations to 27 percent for developing nations. The gender wage gap can only be explained by around one-fifth of the variations in worker and job characteristics, so it is imperative that we verify whether globalization will result in a further narrowing or growing of this gap.

Globalization may reduce the gender wage gap for a number of reasons, according to the literature. For individuals and firms, globalization entails higher discrimination costs and increased competitive pressures (Becker, 1971). Furthermore, correspondingly, more women will become employed in export-focused firms as trade grows (Ozler, 2000; Standing, 1999; Wood, 1991; Joekes, 1995). Increasing demand for women's labor will close the gender wage gap if women's relative incomes increase. Trade would tend to reduce gender wage and human capital gaps, along with a rise in infrastructure spending (World Bank, 2001).

The globalization of the economy can, however, exacerbate the gender wage gap. The conventional view of trade is that it will have a negative impact on the economy's limited finite production resources before it helps to boost the economy's productivity. As emerging countries trade increases more, then women workers' earnings will decrease more when they have lower skill levels than their male counterparts. Therefore, the gender wage gap will increase. Developing countries should also see the salary gap between men and women narrow as commerce expands.

A second factor resulting from globalization is increased competition, which may weaken bargaining power for women in fields where "cheap" labor is increasingly prevalent (Seguino, 2003). In addition, Fontana and Wood (2000) contend that women are the majority of workers in the market economy, and that there is an intricate relationship between both traded

industries and other sectors of the market economy, as well as between the modern economy and compensated households. Women are less likely to pursue a lengthy career when they have less spare time or face discrimination because of increased trade (Oostendorp, 2009).

In UNDP's 2022 human development assessment, Tanzania, Uganda, and Kenya were classified as having low human development. A difference between Kenya's index and the 0.54 average for Sub-Saharan Africa exists only in one of the three EAC members. In order to close the disparities, policies and resources must be allocated explicitly to ensure economic development leads to gender equality. In general, the sectoral economic frameworks of EAC member states have shifted away from agriculture over time and toward services and industry to a lesser extent. In contrast to the typical African trend to shift from agriculture to industry after moving from agriculture to industry, the EAC's growth trajectory does not gradually transition to services. As an example, agriculture contributed 31 percent to the GDP of the EAC in 2016, while it contributed 18 percent to the GDP of SSA. This country's industry only accounts for 22 percent of GDP, compared to SSA's 58 percent use of services (24 percent).
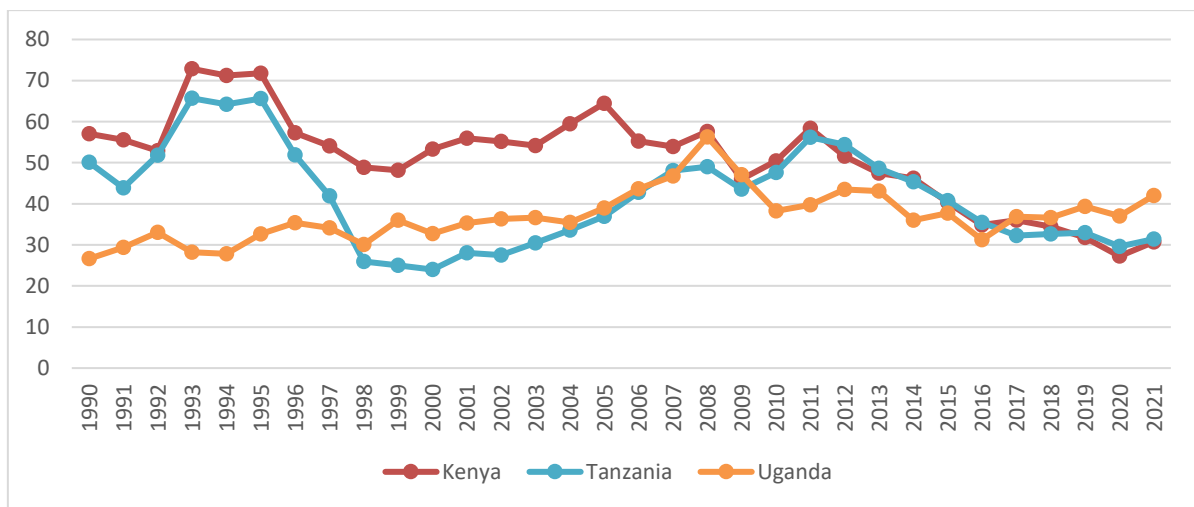

Figure 1.1 Trade openness (Trade % of GDP)
Source: Author's compilation

In Figure 1.1, trade volume is shown as a percentage of GDP for EAC countries since 1995. A 26-percentage-point decline in Tanzania's, Uganda's, and Kenya's openness to trade has been observed between 1995 and 1998. During the period from 1998 to 2008, however, the openness of their trade increased by 26 percentage points and 8 points, respectively. Between 2011 and 2021, the worst trading regime usually exhibited a downward trend. Disaster-prone agriculture, the region's reliance on exports of raw materials and, in oil-importing countries, higher oil prices are all factors contributing to a decline in regional trade. In particular, the structural change of the region did not take place. According to the region's GDP, 56.9% of the region's GDP was generated by the service sector, and 25.7% by agriculture. Approximately 15% of the industry is comprised of construction. As a result of a lack of structural changes in the region, manufactured exports accounted for 14.6% of all exports (ADB 2019). With 42.4% of GDP generated by the service sector, agriculture (34.8%) and industry (22.6%) continue to dominate the region's economy in 2020. In agriculture, labor losses have led to a continued decline in productivity. Agricultural employment increased most in the service and manufacturing sectors, as shown in Figures 2 and 3. It is estimated that employment in the service sector will grow by 37.5% from 2000 to 2019 (ADB, 2021).

Women's employment by sector has changed the most in Tanzania and Uganda, among the EAC partners. Women dominate the labor market at EAC, especially in agriculture. A recent study found that 71% of Tanzanian women, 76% of Kenyan women, and 77% of Ugandan women still work in agriculture. In the long run, men are more likely to move into industries and services than women. According to UNCTAD (2016), women are more likely to be employed in low-skilled industries like tourism and commerce. Due to the lack of structural adjustment of employment in the EAC, agriculture continues to provide the majority of employment opportunities. In EAC commodity exports, primary goods dominate, followed by manufactured goods based on natural resources. Manufacturing industries that consume a lot of resources are the major importers of goods into the EAC.
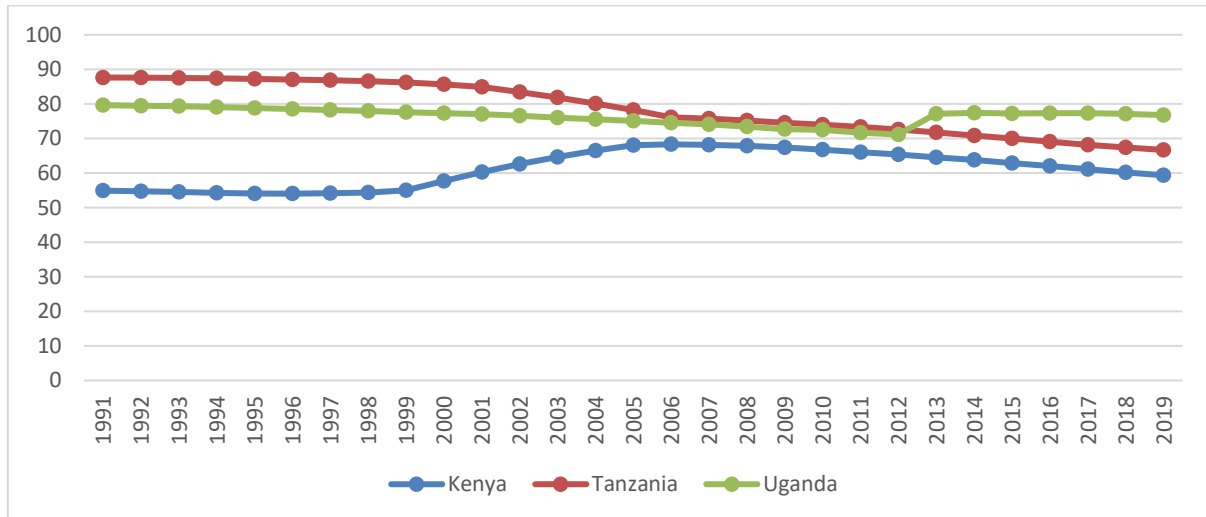

Figure 1.2. Employment in agriculture, female (% of female employment) (modelled ILO estimate)

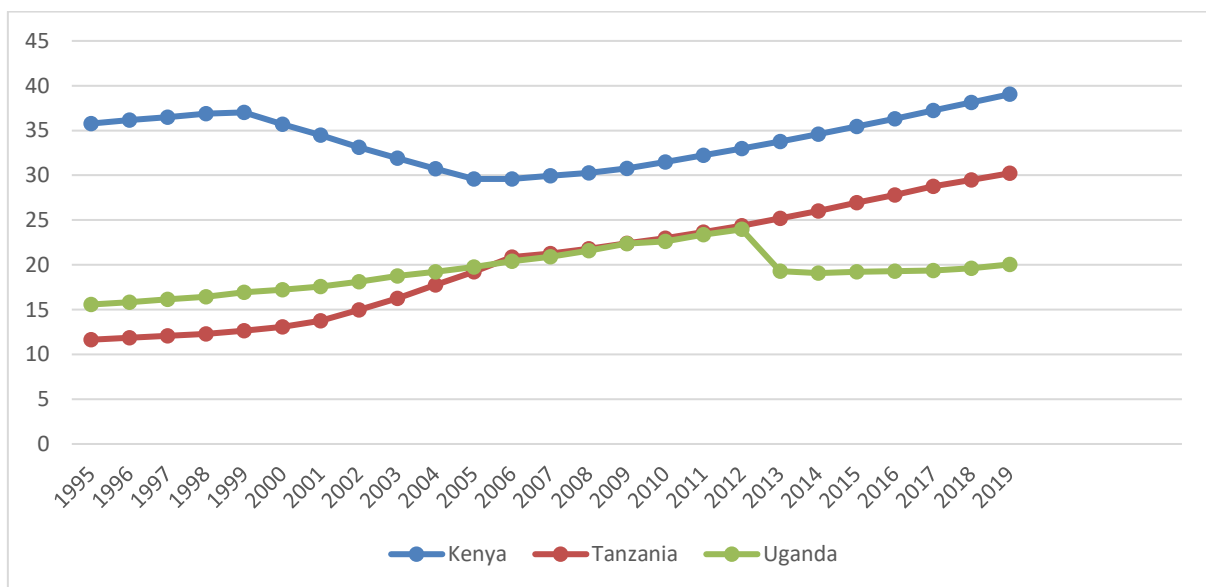**Figure 1.3. Female employment in services (percentage of female employment based on modelled ILO estimates)**
Source: World Development Indicators

Although the female employment seems to be on a general decline (although at a higher level) in the agricultural sector, it seems to be on an upward trend in the services sector. According to (AlAzzawi, 2014) such contradictory forecasts in theory imply that trade liberalization

female labor market impression is dependent upon the trade liberalization route together with sectoral configuration of the economy under study, and therefore remains largely an issue to be determined empirically. This inquiry adds fresh suggestions regarding the connection between growing liberalization of commerce besides employment patterns in Kenya, Uganda, and Tanzania, the East African Community's core economies, for which this subject has not before been investigated.

2.2 Theoretical Literature
2.2.1 The Classical Theory
The supply and demand for labor are considered to be the primary causes of unemployment by the traditional approach. Due to the dependence of the need for labor on the demand for the products it produces, wages increase thereby reducing the demand for labor. Increasing real wages, however, also increases the labor force, which impacts labor supply. Market competition and a free market are the foundations of classical theory. Thus, the intersection of labor supply and demand results in equilibrium wages and employment. In accordance with traditional economic theory, unemployment is caused by an excess labor supply caused by market distortions. Real wages must however change rapidly in order to maintain equilibrium in the labor market. Involuntary unemployment is therefore a transient phenomenon, despite structural and temporary unemployment. Classical theories do not apply in the short run, which is its biggest criticism. As a result, most economic issues, especially unemployment, need to be dealt with in the short term.

2.2.2 The Keynesian Theory
According to Keynesian theory, the aggregate demand for goods and services produced by firms determines the unemployment rate. The main defense is that strong aggregate demand drives business expansion and leads to increased employment (Raifu, 2017). According to this hypothesis, unemployment is caused by a shortage of aggregate demand. Keynesian economists, in contrast to classical economists, take the view that economies are characterized by involuntary unemployment. This theory has been criticized for assuming that equilibrium and underemployment are contradictory and cannot coexist.

2.2.3 Phillips Curve and Okun's Law
A basic theoretical relationship exists between unemployment and a number of macroeconomic factors, which Okun and Phillips provide through Okun's law (Okun, 1962) and Phillips curve (Phillips, 1958). According to Phillips (1958) there is evidence that UK wage growth and unemployment are inversely related. Phillips found that nominal wages rose more rapidly between 1861 and 1957 as the labor market tightened and unemployment fell. Wage growth was highly correlated with price growth, so this relationship was commonly understood as a compromise between inflation and unemployment. As unemployment falls if a country's output falls below aggregate demand, unemployment may fall, thus creating a trade-off between unemployment and inflation. Moreover, when demand exceeds supply, wages and prices tend to rise. Rising prices are therefore often accompanied by falling unemployment.

In a similar study, Okun (1962) examined the relationship between the unemployment rate and real gross domestic product. In the study, real GDP declined by about 3% for unemployment rates above 4%, with real GDP decreasing by 4% for unemployment rates above 4%. Alternatively, Okun suggested that differences in gross domestic product (GDP) ratios are directly related to unemployment rates above the natural rate of unemployment. This relationship suggests that real GDP growth must exceed potential output growth for

unemployment to fall. By combining the Phillips curve and Okun's law, this study can express the relationship between inflation and unemployment on the Phillips curve, and the relationship between output and unemployment using Okun's law. This allows the study to derive variables that directly and adversely affect employment.

Most previous research on gender and trade has focused on labor market issues. Exposure to foreign markets has been shown to improve outcomes for workers in general, but not necessarily for women (Shepherd, 2017). In analyzing the relationship between openness to trade and the proportion of working women in Nigeria, Onyeke and her Ukuweze (2022) used an autoregressive variance lag (ARDL) model. The results show that openness to trade has long-term positive effects on women's labor market participation. However, in the short term the effect is reversed. This result contrasts with that of Su, Tao Li, and Li (2020), which suggests that female labor force participation initially increased due to increased trade opening, but then declined. Therefore, the conclusion is that the country's business market is not necessarily open to greater gender equality, as the results may be ambiguous.

Gachoki (2022) used the ARDL approach to analyze the economic and social dimensions of Kenyan women's employment from 1980 to 2019. The results show that exports have a positive impact on women's employment in Kenya's agricultural sector, while imports have a negative impact. Samaan, Robertson, Lopez, and Artuc (2019) argue that increased exports of Sri Lanka and India to her OECD countries have resulted in higher wages for Indian export workers, but more employment did not create. The majority of college graduates, urban workers and men benefited from wage increases. Evidence for the threshold effect of trade openness affecting female labor force participation in Asian countries was reviewed by Zheng, et al. (2019). To demonstrate trade openness using panel data, the authors compared total trade volume with GDP. The results of the panel survey showed that there is a threshold above which the female labor force participation rate (FLFPR) rises as trade openness increases, and that there is a positive association. Above this threshold, the relationship was found to be negative.

Riza and Halim (2018) used panel data to identify the main factors influencing youth employment over the period 2000-2015. They find that labor productivity has a positive impact on youth employment, while economic growth, inflation and savings have a negative impact on youth unemployment. The methodology used to correlate the variables has been widely cited in current research focusing on women's employment. According to Wamboye et al. (2015), it is assumed that improved production in the agricultural sector will significantly improve the employment prospects of women, but the negative I believe this is due to the expansion of manufacturing, non-manufacturing and service industries, as they tend to work in Japan. In addition to the benefits of sectoral expansion, other factors such as the level of industrial investment and improved education, including declining fertility, are also important to promote women's labor market participation. This study investigated how female employment affects the three major industries of manufacturing, service and agriculture. Instead, new research focuses on how social and economic issues affect women's employment in the agricultural sector. Although the use of trade openness in an aggregate form in this study obscures specific impacts, in this analysis he suggests that the breakdown of the two trade factors should focus on the impacts of interest. has been changed to

From 1980 to 2010, Mujahid (2013) investigated the impact of economic factors on the participation of females in the labor force in Pakistan with ARDL, ECM, and Granger causality. Among the independent variables included in this study were the share of women in the labor

force, annual real GDP per capita, inflation, domestic investment per capita, trade openness, foreign direct investment per capita, and foreign debt. This result suggests that there is a good relationship between female labor force participation and trade openness. Although the variables are held, the use of workforce includes all individuals who meet the criteria for participation in the workforce, which is not appropriate. Imports and exports have also been proven to have different effects on job performance.

Based on the literature surveyed, there is evidence that less research has been done in developing countries compared to developed countries. Since there are few empirical studies proving that trade openness increases women's employment opportunities, it is unclear whether more openness to trade leads to gender equality. Some studies show that further trade liberalization leads to gender equality, while others show early improvements and long-term declines. This suggests that results may vary from country to country and that he should explore the EAC region to find greater trade opportunities. Most studies have used female labor force participation as a poor substitute for employment. It is also clear that the impact of trade opening on employment depends on the country's order of production and the comparative bargaining skills of men and women within the labor industry. Data from Africa, Latin America and Asia show a growing number of global commodity manufacturers. It is more common for these producers to outsource their manufacturing than to produce directly in the region they are based in.

3.3 Theoretical framework

A theoretical framework for this study is derived from Okun's law and Phillips curve theory (Mukisa et al., 2020). Wage growth and unemployment are inversely related to each other, according to Phillips curve theory. As a result, a short-term increase in employment and production capacity will exceed the short-term increase in production capacity due to the knowledge asymmetry. A simple Phillips curve is expressed as:

$$w_g = -\alpha(u - u^*) \qquad\qquad 3.1$$

Where u = unemployment rate, u* = natural rate of unemployment, and Wg = rate of growth of money wage.

As shown in equation 3.1, wages decrease when the unemployment rate rises above the natural rate of unemployment (Wg<0). Money wages rise (Wg> 0) when u< u*. During wage negotiations between employers and employees, real wages are frequently discussed. The new Keynesians believe inflation expectations are crucial. This resulted in the Phillips curve transforming from a wage-unemployment curve into a price-unemployment curve. By adjusting equation 3.1, the nominal wage growth rate is adjusted for anticipated price changes during the contract.

$$w_g - \pi^e = -\alpha(u - u^*) \qquad\qquad 3.2$$

Where π^e is the anticipated rate of price inflation, which is defined as:

$$\pi^e = \frac{p^e_{t+1}-p_t}{p_t} \qquad\qquad 3.3$$

Adding productivity gains to the price fluctuations will result in real inflation that matches wage inflation. Accordingly, equation 3.4 is the contemporary formulation of the Phillips curve:

$$\pi = \pi^e - \alpha(u - u^*) \qquad\qquad 3.4$$

Where:

$$\pi = \frac{p_{t+1}-p_t}{p_t} \qquad\qquad 3.5$$

Equation 3.4 demonstrates that when real inflation is equal to expected inflation, actual unemployment is equal to the natural rate. $\pi = \pi^e$. After describing the connection between

inflation and unemployment, we move on to determining the connection between output and unemployment using Okun's law as follows:

$$\frac{Y - Y^*}{Y^*} = -\theta(u - u^*)$$ 3.6

where Y is the current GDP, Y* is the projected GDP, and θ is the tuning parameter. The aggregate supply curve is constructed by combining equations 3.4 (Phillips curve equation) and 3.6 (Okun's law equation).

$$p_{t+1} = p_{t+1}^e[1 - \varphi(Y - Y^*)]$$ 3.7

where $\varphi = \frac{\alpha p_t}{\theta Y^* p_{t+1}^e}$ 3.8

The equation linking GDP, inflation, and unemployment is obtained from equations 3.6 and 3.7 as follows:

$$u - u^* = -(\pi = \pi^e)\frac{1}{\varphi Y^* \theta}$$ 3.9

Equation 3.9 shows Okun's law and the Phillips curve, showing that production and the unemployment rate are inversely related. But from a practical point of view, factors other than inflation and production can also contribute to unemployment, especially in developing countries. Therefore, a general term (Φ) is added to Equation 3.9 to account for additional variables. Some variables are directly related to the unemployment rate, while others are related inversely. Therefore, Φd considers variables directly related to unemployment. Φi describes variables that are inversely related to the unemployment rate. Therefore, Equation 3.9 is revised as:

$$u - u^* = (\pi^e - \pi)\frac{\emptyset_d}{\varphi Y^* \theta}\frac{1}{\emptyset_i}$$ 3.10

By Log-linearizing equation 3.10:

$$\ln(u - u^*) = \ln(\pi^e - \pi) + \ln\emptyset_d - \ln Y^* - \ln\emptyset_i + \forall$$ 3.11

Where $\forall = -\ln \varphi - \ln\theta$ which is a constant since both ψ and θ are parameters.

3.4 Model specification

The unemployment rate of women in agricultural and service sectors depends on inflation, trade openness, investment, external debt servicing, and per capita income, as shown in equations 3.12 and 3.13.

$$FAGRI = f(TO, FDI, Y, CPI, ED)$$ 3.12
$$FSER = f(TO, FDI, Y, CPI, ED)$$ 3.13

Women's employment in agriculture and the service sectors (FAGRI, FSER) is the dependent variable. An individual's Per capita Income (Y) is regressed by inflation (CPI), external debt (ED), trade openness (TO) and foreign direct investment (FDI).

Through the competitive channel, trade openness was found to have a vague impact on the participation of men and women in the labor force. According to Becker's (1957) model of economic discrimination, when competition increases, firms that do not discriminate will outperform those employers who tend to discriminate against workers. minority. If increased domestic competition is a result of openness to trade, women may face less discrimination in the labor market. Increased import penetration has the opposite effect of greater access to global markets, increasing profit margins and thus encouraging discriminatory behavior (Yahmed 2010). As import penetration increases and exports tend to increase, trade openness poses two potential contradictions. Others take a darker view of liberalization and competition, arguing that it weakens women's bargaining power, making them more attractive to companies.

According to Wamboye and Seguino (2014), imports and exports need to be assessed differently when examining the impact of trade opening on employment. First, even in situations where trade openness is positive when considering imports and exports, net exports,

which are clearly not positive, are also taken into account when considering the demand-side impact of trade openness. Second, feminist economists argue that the developing world's export sector is feminized due to the low skill intensity of the labor force and the general low income of women. However, as Kenya is a net exporter of commodities and a country where most of the industry is based on agriculture, the impact on men's and women's employment may be different. Therefore, the sign of the coefficients of imports and exports is not theorized a priori in this study.

Depending on the economic structure and trade composition, women's access to employment opportunities may definitely improve in export industries, where women make up the majority of the labor force, and trade is more open than men's. (Wamboye & Seguino 2014). There is uncertainty about how foreign direct investment will affect women's employment. Foreign direct investment and domestic investment can facilitate market-based liquidity. Economic expansion through investment creates more employment opportunities for men and women. When foreign direct investment is invested in export companies, the demand for labor increases.

According to (Jaffri, Sana & Asjeed 2015), firms believe that hiring women is more cost-effective and increases FAGRI because women's wages are lower. Conversely, foreign investment in technology-based agricultural production sectors may benefit from male computer and software engineers having better education and skills (compared to females) and lower FAGRI. (Austendrop, 2009). As the economy grows, women are more likely to participate, making it easier for them to find jobs and participate in more constructive activities. In contrast, a negative growth economy creates a restraining environment characterized by unfavorable economic and social conditions, and in most cases further declines in women's employment prospects. Therefore, GDP per capita (Y) has a positive impact on her FAGRI. In theory, external debt (ED) used for development-oriented initiatives drives economic growth. However, when a significant portion of debt is used to service external debt, it leads to lower economic activity and reduced labor demand for both men and women (Mujahid, 2013). Equations 3.14 and 3.15 can be used to specify the model used to analyze how trade openness affects female unemployment.

$$FAGRI_{it} = \alpha_i + \beta_1 lnTO_{it} + \beta_2 lnFDI_{it} + \beta_3 lnCPI_{it} + \beta_4 lnY_{it} + \beta_5 lnED_{it} + \varepsilon_{it} \quad 3.14$$
$$FSER_{it} = \alpha_i + \beta_1 lnTO_{it} + \beta_2 lnFDI_{it} + \beta_3 lnCPI_{it} + \beta_4 lnY_{it} + \beta_5 lnED_{it} + \varepsilon_{it} \quad 3.15$$

EMPIRICAL FINDINGS
4.2 Descriptive Statistics
Important characteristics of the variables employed in this study are summarized by the descriptive statistics. The descriptive statistics for variables utilized in this analysis are measures of dispersion and central tendency. Female Employment in services, Female Employment in goods, Foreign direct investment, trade openness, total debt service as a proportion of GDP, inflation, and per capita income were among the variables analyzed. The female employment in the services sector as a proportion of women population averaged 24 with a minimum of 11 percent and maximum 39 percent. The female employment in the agricultural sector averaged three times that of services sector at 72 percent with the minimum and maximum as 54 percent and 87 percent respectively. The agricultural sector remains as the chief employer in the EAC countries and therefore such results are reflective of the real situation. The FDI as a proportion of GDP remains low at an average of 2.3 percent, with a maximum of only 7 percent and a minimum of 0.04 percent. The maximum total trade as a proportion of GDP in the EAC region was 72 percent and a minimum of 24 percent averaging

43 percent. There is a large standard deviation of 11 which could be explained by varied values for individual country under study. the average total debt service is 2 percent which also masks the individual country figures. The minimum amount of combined national income going to debt repayment is 0.23 percent and maximum 13 percent. Inflation in the region is high ranging from -0.28 percent to a high of 34 percent. The per capita income averaged 907 per person with a maximum of 1,654.

Table 4.1 Descriptive Statistics

Variable	Obs	Mean	SD	Min	Max
Female employment in services sector	78	24.37782	8.061248	11.46	39.04
Female employment in agricultural sector	78	71.92474	8.837257	54.05	87.45
Foreign Direct Investment	78	2.368107	1.565341	0.0408334	6.656597
Trade openness	78	43.46491	11.17792	23.98087	71.74574
Total Debt Service	78	2.075679	2.165004	0.2318741	12.98728
Inflation	78	8.559385	6.26852	-0.2875085	34.08336
Per capita Income	78	907.022	338.189	406.2646	1,653.828

Source: Authors Compilations (2023)

4.3 Diagnostic Tests
4.3.1 Test for Stationarity

Several time series properties were investigated prior to estimation and interpretation of the results. This was done to ensure that no erroneous findings were produced (Gujarati, 2003). Levin, Lin, and Chu (2002) test were used in the investigation to confirm the stationarity of the variables under consideration. The test results are provided in table 4.2. The null hypothesis of the presence of a unit root at level was rejected. According to the stationarity test, foreign direct investment, trade openness, total debt service, and inflation were stationary at the level I(0) while female employment in agricultural and services sector, and per capita income were stationary at fist difference I(1).

Table 4.2 Results of Panel Unit Root Test

Variable	Test	t-statistics	P Value	Conclusion
FAGRI	Levin, lin& chu	-2.8565	0.0021***	Stationary at first difference I(1)
FSER	Levin, lin& chu	-1.7347	0.0414***	Stationary at first difference I(1)
FDI	Levin, lin& chu	-2.5961	0.0047***	Stationary at level I(0)
TO	Levin, lin& chu	-2.1276	0.0167***	Stationary at level I(0)
TDS	Levin, lin& chu	-2.6393	0.0042***	Stationary at level I(0)
CPI	Levin, lin& chu	-1.5987	0.0549**	Stationary at level I(0)
Y	Levin, lin& chu	-1.7679	0.0385***	Stationary at first difference I(1)

*, **, *** implies 10%, 5% and 1% level of significance.
Source: Author's Compilation (2023)

4.3.2 Hausman Test

The Hausman test is a traditional method for determining whether a model has a fixed or random effect. The test compares the random effects estimate to the inside estimator in the individual specific effects model. If there is a statistically significant difference between these two estimators, we can conclude that the model has fixed effects and random effects are present if the two estimators are statistically insignificant. The Hausman tests for the two objectives are presented as Annex 1. The Hausman estimator is not statistically significant for both objectives is not statistically significant and hence it was concluded that there are no fixed effects and therefore the random effects results were adopted.

4.3.3 Test for Heteroskedasticity

The test for heteroscedasticity Breusch-pagan/Cook-Weisberg was conducted based on the null hypothesis **that the** variance among the residuals is constant. Tests obtained showed a Chi2(1) of 0.02 with a probability Prob>chi2 of 0.8936. the probability is not statistically significant at the level of 5 percent, hence, the null hypothesis could not be rejected hence it was concluded that there is no heteroscedasticity.

4.4 The objectives of the study

4.4.1 The effect of Openness of Trade on the Employment of women in the Agricultural Sector.

The opening objective intended to explore the consequence of openness of comerce on employment of women in the agriculture sector in EAC countries. to achieve this both the fixed and random effects were estimated while Hausman test was applied to determine the most suitable model. The probability value for the Hausman test value of 4.34 was found to be statistically significant at the acceptable level of 5 percent and therefore the fixed effect model was the most appropriate. Table 4.3 presents the regression results with the dependent variable as number of women employed in the agricultural sector, while Investment, trade openness, total debt service, inflation and income as the independent variables. The R-squared was 83.7 percent representing a high association of the regressors with the dependent variable.

Table 4.3 Regression results for Women Employment in Agriculture

Dependent variable	Women Employment in Agriculture (FAGRI)		
	Coef	SE	P>Z
FDI	-0.3338484	0.3865049	0.388
TO	-0.1596493	0.0551343	0.004
TDS	-1.294086	0.2558103	0.000
CPI	0.3830823	0.0863526	0.000
Y	-0.0184487	0.0017248	0.000

*, **, *** implies 10%, 5% and 1% level of significance.
Source: Author's Compilation (2023)

The coefficient for Investment in the three countries was found to be statistically insignificant but negative. Such results indicate that investment in EAC is not in the agricultural sector where women are disproportionately represented. Concerning women employment in agricultural sector, the coefficient for trade openness is negative and significant meaning a unit increase in trade openness decreases the number of women employed in the agricultural sector by 0.2. These findings fall in line as per (Wamboye & Seguino, 2015) where an increase in the share of trade in GDP had a depressing effect on women employment. Similarly (Kuete & Voufo, 2019) argues that trade openness may not lead to the expansion of exports in sectors where most women work, and seems therefore not to increase women's job opportunities. According to (UNCTAD, 2016) trade liberalization has no discernible impact on economic empowerment of women's and their overall well-being. The impact might be both positive or negative such that women may benefit and suffer as a result of increased trade.

Trade openness necessitates specialization and intensification of farming practices, with single cash crops (monoculture), while in addition, necessitates diversification of agriculture, which tends to deviate from staple crops of low-value, and toward commodities of higher-value such as horticultural crops. Such trends, particularly agricultural diversification and commercialization, create considerable obstacles for women while also providing new opportunities (UNCTAD, 2016).Considering trade openness was a sum of exports and imports it becomes imperative to discern the effects of the two components. The magnitude of the

exports response with respect to the import response seems to influence whether or not liberalization creates jobs. A study by (Braunstein, 2012) showed that the procedure of amalgamation in Vietnam, for example, revealed that there was a rapid net growth in employment in response to the expansion of the exportable sector of the country. The export industry nonetheless, grew rapidly while various import limitations were being affected, reducing the detrimental penetration influence of imports.

Vietnam's case mirrors the 'Asian tigers' experience through the phase of sustained and unprecedented economic expansion. Majority of the Asian tigers followed an outward economic orientation as a policy although shielding local firms against import competition. Conversely, an examination of South Africa employment at the aggregate level through the country's latest liberalization of trade revealed a very insignificant employment effect. This is due to the fact that the good advantages of growth in exports were practically completely counterbalanced by the harmful effects of infiltration in import. Males stand a better position to reap from the export prospects in commercial agriculture or extraction of natural resources in largely agricultural countries, while females lose jobs because they are disproportionately represented in agricultural sectors which are import-competing for instance food crops in these countries.

Given that the EAC trades mostly in export of traditional cash crops such as tea and coffee, such results could be attributed to a shift to higher-quality market sectors. Countries such as Kenya are turning away from ordinary grades and toward high quality and specialist brands. Along with this, the move in the direction of contract form of agriculture and alternative systems of structured supply chains generates both opportunities and challenges for women. Such arrangements can favor market-oriented agriculturalists with better inputs and marketing networks access, crowding out poor small-scale growers (who are mainly female farmers).

Total debt repayment coefficient is negative and significant. A unit increase in TDS reduces women employment in the agricultural sector proportionately. According to Musindarwezo and Jones (2019), public debt and its servicing are a particular challenge for the African continent, impeding the ability of governments to meet their commitments on gender equality and the advancement of women's rights. Women endure an unequal share of the costs of servicing this debt, and the funds borrowed are rarely utilized in ways that prioritize women's rights. Governments make decisions to minimize spending by downsizing pay, retrenchment, and redundancy, further corroding women's abilities to extend and build social networks, obtain skills, and confidence.

The coefficient for inflation 0.4 is both statistically significant given the probability of 0.0000 and positive. This means that if inflation increases by one unit, women employment in the agricultural sector would increase by 0.4 units. This is in line with the Philips curve on the inverse relationship between unemployment and inflation. The Phillips curve theory states that there is an inverse relationship between the rate of pay growth and the level of unemployment (trade-off between unemployment and inflation). Since the unexpected inflationary shock lowers real wages while expanding output and employment over capacity in the near term, this trade-off is based on knowledge asymmetry.

The association between female agricultural employment and economic growth (GDP) is negative, however the coefficient is tiny. This means that when GDP grows, so do the work prospects for women. According to earlier research, this is a U-shaped association known as the feminization-U. According to the industrialization theory, economic expansion creates

more job prospects. Female employment declines in the short run when the economy begins to industrialize. In the long run, trends such as the commercialization of home labor and the growing importance of the non-agricultural sector, as well as women's enhanced access to education and family planning, benefit female productivity. This reduces the effect female-male productivity gap, resulting in more job chances for women (Wamboye et al., 2015).

4.4.2 The effect of Openness of Trade on the Employment of women in the Services Sector.

Objective two of the study pursued to seek how the openness of trade affects employment women in the services sector. Table 4.3 presents the regression results with the number of women employed in the services sector as the dependent variable, while Investment, trade openness, total debt service, inflation and income as the independent variables. The R-squared was 91.4 percent representing a high association of the independent with the dependent variables. The Hausman test value of 0.05 had a p value more than 5 percent hence not statistically significant indicating absence of fixed effects. Random effect model was therefore adopted and the results are presented in table 4.4.

Table 4.4 Regression Results-Female Employment in Services Sector

Dependent variable	Female Employment in Services sector (FSER)		
	Coef	SE	P>Z
FDI	0.1277807	0.256473	0.618
TO	0.0931356	0.0365855	0.011***
TDS	0.5492321	0.169748	0.001***
CPI	-0.2119341	0.057301	0.000***
Y	0.0204348	1.640378	0.000***

*, **, *** implies 10%, 5% and 1% level of significance.
Source: **Author's Compilation (2023)**

Similar to table 4.2 the coefficient for FDI is statistically insignificant. According to (UNCTAD, 2016) the effect of investment on female employment would be reinforced if investments are received in labor-intensive sectors that rely mostly on a female workforce or if the new technology brought in by foreign investors allow firms to rely less on men's physical capital. In contrast to the coefficient for the agricultural sector, openness of trade exhibit a positive and statistically significant coefficient. This means that increase in total trade as a proportion of GDP by a unit increased the number of women employed in the services sector by 0.1. Such contradictory results indicate the double edge where women in EAC may benefit as consumers due to cheap food imports but not as workers. This may indicate the reason the coefficient for trade openness with respect to female employment in the services sector is positive and statistically significant while negative in the agricultural sector. According to (AlAzzawi, 2014), these contradictory hypothetical forecasts imply that the impact of trade liberalization on females in the labor market stems from the nature of the process of liberalization and the industrial composition of the economy under study, and therefore can only be determined empirically.

The coefficient for total debt repayment of 0.5 statistically significant at the recommended level of 5 percent and positive. A unit percentage growth in total debt service increases women employment in the services sector by 0.5 percent. Women's employment is mostly concentrated in a few industries particularly services, where access to jobs is easier even if the wages are often lower and job security minimal. Even within such industries, women are concentrated at the bottom. Although there is no dependable data on services sector, prior to the COVID-19 pandemic, the worldwide Travel and Tourism sector grew faster than the global economy from 2011 to 2019 (Avel, 2022). From the results it is notable that the same trend

maybe the same in EAC. The single, multiple entry visa is applicable in Kenya, Uganda and Rwanda. The general world trend and the Visa which was intended to boost tousirm maybe contributed to more female employment in the sector despite government cutback on national income to repay debt.

The coefficient associated with inflation was found to be statistically significant at 1 percent and negative. A unit increase in inflation, female employment in the services sector decrease by 0.02. Sulasmiyati, (2019), found that inflation caused a decline of visitors. With rising inflation, travel is likely one of the worst-affected segments, as customers prefer to curtail discretionary spending when their purchasing power falls. Being a labour-intensive sector (where women are disproportionately represented) a downward trend of visitors can therefore be associated with loss of jobs. GDP has an equal (0.02) but positive coefficient which is statistically significant at 1 percent. According to the EAC economic outlook 2019, the importance of the services sector in the EAC, like the rest of the globe, has grown, with the sector accounting for an average of 59 percent of the region's GDP compared to agriculture's 25.7 percent. The sector has been a major contributor to the expansion of the EAC economies and hence employment.

SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS
5.2 Summary
This study's general objective of was to analyses trade openness and women employment in selected EAC countries. The specific objectives considered were: To examine how the proportion of total trade in GDP affects women labor in the agriculture within the EAC; and to examine how trade openness affects the employment of women in the services sector in selected EAC countries. Numerous studies have examined the distributional effects of globalization on rich and poor countries, rural and urban areas, and high and low -skill employees. The question of whether globalization has varied effects on male and female workers has received far less attention. This is majorly because trade policies have always been presumed to be gender neutral. The phillips curve and Okuns laws provided the theoretical foundation of this study in evaluating the effect of openness of trade on gendered labor. Panel data was utilized in the study ranging from 1994 to 2019 due to lack of uniform data before 1994. Beyond 2019, some variables did not have data.

Random effect model was chosen after applying the Hausman test to assess if fixed or random effect was more appropriate. The results showed that between 1994 to 2019 there is a clear shift in employment structure where the number of female labourers has a declining trend in the agricultural sector while trade openness seem to enhance employment in the services sector. The decline in agricultural sector is 20 percent given a 10 percent increase in trade openness while female employment in the services sector increased by 10 percent given a similar magnitude increase in trade openness. The results imply that agriculture although touted as the primary employer in EAC, the sector maybe losing female workers while the services sector was gaining workers in the period under study.

5.3 Conclusions
The first objective was to examine how trade openness affects employment of women in the agricultural sector in selected EAC nations. The results show that an increase in the variable of interest (trade openness) decreases women employment in the agriculture sector. The results were not unexpected because trade liberalization has no obvious impact on women's well-being and their empowerment economically. Its impact might be both positive or negative such that women may benefit and suffer as a result of increased trade. Trade openness necessitates

concentrated agriculture alongside specialism in monoculture export crops. However, it can in addition necessitate broadening of agricultural lines of production, with a move geared away from staple crops in the direction of higher-value products such as horticultural commodities. It is tendencies like these, particularly agricultural diversification and commercialization, therefore seem to create considerable obstacles for women in EAC.

The second objective was to examine how trade openness affects the employment of women in the services sector in selected EAC countries. The study found that total trade as a proportion of GDP increased the number of women employed in the services sector. this is an opposite effect compared to the agricultural sector. Such contradictory results indicate the double edge where women in EAC may benefit as consumers due to cheap food imports but not as workers. This may indicate the reason the coefficient for trade openness with respect to female employment in the services sector is positive and statistically significant while negative in the agricultural sector.

5.4 Policy Implications

The results shows that trade openness is encouraging female employment in the services sector. The government can therefore focus on improving and creating more opportunities in the services sector. To help enhance women's employment in the services sector, both the county and central government can provide commerce enabling services and support with their publicizing. This includes marketing the country as a services hub and creation of unique service-based products. In additions if large agro-manufacturers, merchants, or venders embrace a redesign of the chain that goes further than gender norms, it can generate considerable opportunities for women. Importers and processors of specialty produce may incorporate women empowerment messages in marketing their products. Women's empowerment might be developed into a focal point for their favored dealer programs. Women workers are also involved in family care work and therefore employers could adopt family friendly work arrangements such as flexible hours which would promote their ability to sustain employment. Foreign direct investment encourages female employment in the services sector. The implication of this is that although investment has been on the increase in the region it has not been of influence to female employment in the services sector. The government can reverse this situation by directing targeted investment in the services sector. Trade openness was found to improve female employment in the services sector. Considering trade openness included a sum of exports and imports and based on other studies the policy implication is that EAC pursue export-oriented strategy while shielding domestic firms from import competition in their integration and hence trade liberalization. Exporting companies require extremely flexible staff for working odd hours, receiving late-night phone calls, and employees who can engage in last-minute overseas travel, and hence discriminate against women since they are believed to be less adaptable. In addition, the country should be watchful of import induced competition which is known to edge women into the non-tradeable sector or out of employment entirely particularly low educated women. Considering the women employed in the services sector particularly tourism is in the low-level jobs as cleaners and waiters, deliberate efforts should be made to improve their education. Trade openness was found to depress female employment in agricultural sector in an era when education attainment gaps are being closed worldwide. This may be explained by the skills set required in the current form of agriculture and the policy recommendation is to equip women with skills such as ploughing, maintenance of farm machinery, provide credit and education on contract farming. This will ensure that they move from the lower cadre employment in the agricultural sector to higher levels where they can retain employment.

REFERENCES

African Development Bank (2019). African Economic Outlook: Africa growth prospects remain steady industry should lead growth. AfDB.

African Development Bank (2021). From Debt Resolution to Growth: The Road Ahead for Africa

AlaAzzawi, S. (2014). Trade liberalization, industry concentration and female workers: the

Anker, R. (1998). Gender and Jobs: Sex Segregation of Occupations in the World. International Labour Organization

Artecona, R., & Cunningham, W. (2002). Effects of Trade Liberalization on the Gender Wage Gap in Mexico. World Bank, Washington DC.

Becker, G. (1971). The Economics of Discrimination, Chicago: University of Chicago Press.

Bloom, N. Draca, M., and Reenen, J. (2016). Trade Induced Technical Change? The Impact of Chinese Imports on Innovation, IT and Productivity." *Review of Economic Studies*, 83, 87-117.

Braunstein, E. (2012). A Consideration of its Gendered Employment Effects. United Nations

Çağatay, N., and Berik, G. (1990). "Transition to Export-Led Growth in Turkey: Is There a Feminization of Employment?". *Review of Radical Political Economics*, 22(1), 115–134.
        case of Egypt. Journal of Labor Policy, 3 (20)
         Conditions Harm Women in Africa. Bretton Wood Project.

Cooray, A., Dutta, N., & Mallick S. (2017). Trade Openness and Labour Force Participation in Africa: The Role of Political Institutions. *Industrial Relations*, 56 (2).

Fontana, M., and Wood, A. (2000) Modeling the Effects of Trade on Women, at Work and at Home *World Development*, 28 (7), 1173-1190

Fontana, Marzia, Susan Joekes and Rachel Masika (1998). Global Trade Expansion and Liberalization: Gender Issues and Impacts" BRIDGE Development and Gender, report #42.

Gujarati, D. N. (2003). Basic econometrics (4th ed). McGraw Hill.

Hirata, G. and Soares R. (2016). Competition and the Racial Wage Gap: Testing Becker's Model of Employer Discrimination. IZA Discussion Paper No. 9764

Joekes S (1995). Trade-related employment for women in industry and services in developing countries. Occasional Paper No. 5. United Nations Research Institute for Social Development.

Juhn, C., Ujhelyi, G. & Villegas-Sanchez C. (2014). "Men, women, and machines: How trade impacts gender inequality," Journal of Development Economics, 106, 179-93.

Khalid, M., (2013). Economic Determinants and Female Labour Force Participation: An Empirical Analysis of Pakistan. *Developing Country Studies.*3, (7).

Kis-Katos, K., Pieters, J. and Sparrow R. (2018). Globalization and social change: Gender-specific effects of trade liberalization in Indonesia. *IMF Economic Review,* 66(4), 763-93.
        Kuete, S. N. A., & Voufo, B. T. (2016). How Does Trade Openness Affect Women's job

Kuete, S. N. A., &Voufo, B. T. (n.d.). How Does Trade Openness Affect Women's Job

Musindarwezo, D., & Jones, T. (2019). Debt and Gender Equality: How Debt-Servicing

Oostendorp, R. H. (2009). "Globalization and the gender wage gap." *World Bank Economic Review* 23:1: 141–161. Opportunities and Earnings in Cameroon?

Ozler, S. (2000). Export Orientation and Female Share of Employment: Evidence from Turkey", World Development, 28(7), 1239-48.

Pieters, J. (2018). Trade liberalization and gender inequality. IZA World of Labor 2018,114 (2)
         Research Institute for Social Development. Programme Paper No. 14

Seguino, S. (2003). Why Are Women in the Caribbean So Much More Likely Than Men to Be Unemployed? *Social and Economic Studies,* 52 (4) 83-120.

Standing, G. (1999). Global feminization Through Flexible Labor: A Theme Revisited", World Development, 27(3), 583-602.

Sulasmiyati, S. (2019). Analyzing inflation influence toward the number of foreign tourists visiting indonesia and their impact on indonesia's economic growth. *Media binailmiah*,

UNCTAD. (2016). Trade as a tool for the economic empowerment of women.

United Nations Conference on Trade and Development (UNCTAD). (2016). Trade as a tool for the economic empowerment of women.

United nations Development Program (2022). Human Development Report.

Wamboye, E. F., &Seguino, S. (2015). Gender Effects of Trade Openness in Sub-Saharan Africa. *Feminist Economics*, *21*(3), 82–113. https://doi.org/10.1080/13545701.2014.927583

Wamboye, E. F., Adekola, A. F., & Sergi, B. S. (2015). Sectoral Shifts and Women's Employment: A Study of Thirty-Nine Least Developed Countries. *Journal of Economic Issues*, *49*(4), 1045–1076. https://doi.org/10.1080/00213624.2015.1105039

Wood, A. (1991). "North-South trade and female labour in manufacturing: An asymmetry," The Journal of Development Studies, 27(2), 168-89.

World Bank (2001): Engendering Development. Through Gender Equality in Rights, Resources, and Voice. World Bank Policy Research Report. New York: Oxford University Press.

Zheng-Zheng Li, Chi-Wei Su, Ran Tao & Lin-Na Hao (2019). Enhance or depress? The effect of trade on active females in the labour market, Economic Research-EkonomskaIstraživanja, 32 (1), 2680-2698.

Cite this article:

Published by