

**Sectoral Impacts of Trade on Gender, Wages and Employment in  
India**



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## 1. INTRODUCTION

Over the last few decades, gender issues have gained in importance in trade policy debates. Theoretical literature concludes that trade liberalization decreases gender wage gap and that trade policies are class, race and gender-neutral. The main theoretical foundations come from the Heckscher-Ohlin/Stolper-Samuelson (HO/SS) theory or Becker's theory of discrimination.

The neo-classical view is that trade will open the economy to greater competition and therefore allocate labour to its most productive use, so as to minimise costs. Gender discrimination and resulting wage differentials are economically costly insofar as it leads to an allocation of resources that does not maximise output. This would suggest that trade liberalisation and increased competition would provoke a decrease in the gender differential in wages (Becker). Another view which is based on the Heckscher-Ohlin model points to the factor-price equalisation effect of trade. Countries abundant in unskilled labour tend to specialise in unskilled labour-intensive exports. Demand for lower-skilled labour will therefore rise. The wages of unskilled labour will thus increase relative to skilled labour. This effect also points to a narrowing of the gender wage gap in developing countries open to trade since women are often employed in lower-wage, lower-skilled jobs than men.

Evidence shows that trade tends to increase the availability of wage jobs for women, particularly in export sectors. For many women, more integrated markets have resulted in an improvement in their economic and social status. For some women, formal paid employment has replaced unpaid work at home or paid employment in the informal economy. Wage employment has also given some women greater economic independence and more control over household resources and has often raised their social status within even the most oppressively patriarchal societies. But some defining factors such as continued gender discrimination, lower skill levels, and gender inequalities in access to resources may impede women's ability to benefit from trade expansion.

Gender differences in orientations, starting work conditions, and access to education, employment and resources, mean that women are affected differently by trade liberalisation and their ability to take advantage of the opportunities offered by trade are unequal. Women in developing countries are often poorer, less educated, receive lower wages, have less access to resources and are more constrained in their employment choices than men. The impact of trade liberalisation on women is important not only because they represent over half of any population, but also because they face inherent constraints which make them less capable of benefiting from liberalisation. Once such social and economic constraints are identified, well-designed policy responses may aid women in taking advantage of greater openness to trade.

Several empirical studies have been conducted to observe and estimate the gender effects of trade liberalization and a number of them find that it leads to a higher wage gap between men and women. **This study aims at ascertaining the magnitude of wage premium earned by men in the Manufacturing and Services as well as the Agricultural sector in India. Our study uses the unit-level data provided by the 64<sup>th</sup> Round of the National Sample Survey which is conducted for the period July 2007 to June 2008.** The survey contains data for 'Employment-Unemployment and Migration'. The survey covers the whole Indian Union *except* Leh (Ladakh) and Kargil districts of Jammu & Kashmir (for central sample), interior villages of

Nagaland situated beyond five kilometres of the bus route and villages in Andaman and Nicobar Islands which remain inaccessible throughout the year.

The following section pertains to review of literature on the studies already been conducted in this field.

## **2. LITERATURE REVIEW**

Various empirical studies which have been conducted to look at the impact of trade liberalization on gender, suggest that increasing openness to trade is often associated with a widening of the wage gap. Most of these studies are built on the neoclassical theory based on Becker's theory of discrimination (as mentioned above) which states that, if discrimination is costly, then increased industry competitiveness from international trade reduces the incentive for employers to discriminate against women. This effect is more pronounced in concentrated sectors of the economy where employers can use excess profits to cover the costs of discrimination. Alternatively, increased international trade may contribute to employment segregation and reduced bargaining power for women to achieve wage gains. Some of the studies have been discussed below.

**Korinek (2005) in the OEDC Working Paper "Trade and Gender: Issues and Interactions"** examines ways in which greater integration through trade impacts women and men differently, and ensuing implications for growth. The paper finds that trade creates jobs for women in export-oriented sectors. Although women are more than ever formally employed, differences in wages earned by men and women persist in all countries. Women also have less access to productive resources, time and, particularly in many developing countries, education. Professional women continue to encounter discrimination in hiring and promotion, including in OECD countries.

The study suggests that women comprise between 53% and 90% of the employed in many export sectors in middle-income developing countries. These jobs bring more household resources under women's control, which in turn has a positive effect on investments in the health and education of future generations. However, there is some evidence that women are constrained from moving into more skilled, higher-paying jobs created by trade liberalisation because they have less access to resources, education and time.

Women are heavily employed in two sectors that continue to undergo adjustment and change due to trade liberalisation: agriculture, and textiles and clothing. It is found that women are generally more constrained than men from reaping the benefits from the expansion of trade in agriculture. Limited access to productive resources often prevents them from adopting new technologies or increasing their economies of scale. On the other hand, export-oriented textiles and clothing production has brought employment to women and strengthened growth in many developing countries, along-with greater independence and access to household resources for many women. It is unclear, however, to what extent the sector will ensure long-term growth, due to the potential displacement of jobs to lower-cost countries, and the potential for reinforcement of the gender wage gap.

Theoretical work since endogenous growth theories suggest that export-oriented firms will compete based on cost reduction and will use the wage differential as a competitive tool. It has

been documented that trade often results in a premium on skills, due to the necessity to innovate constantly in a more competitive, integrated world economy. The bargaining power of skilled workers will, therefore rise, while that of unskilled workers may not. Since, in many developing countries the average man has a higher level of education and labour market skills than the average woman; this would tend to widen the wage gender disparities. A sudden, large influx of unskilled workers into paid employment, drawn by opportunities offered by new export-oriented industries, could further cause a decrease in unskilled wages. An exception was found for high-skill occupations in less developed countries where there is no evidence that trade has a narrowing impact. Insofar as skills tend to be relatively homogeneous within narrowly defined occupations, the narrowing of the gender wage gap can be interpreted as evidence that there is less labour market discrimination as trade increases.

In conclusion, it seems unlikely that the competitive forces from trade liberalisation alone will eliminate the wage gap between women and men. Even in OECD countries, where women have generally attained the same level of skills and education as men, women earn less than men do.

**Menon & Rodgers (2006)** in their study “**The Impact of Trade Liberalization on Gender Wage Differentials in India’s Manufacturing Sector**” address the question of whether the increasing competitive forces from India’s trade liberalization affects the wages of male and female workers differently.

The study demonstrates that although an increase in trade still has a mitigating effect on the gender wage gap, under certain conditions, the net effect may be a widening of the wage gap between male and female workers. The theory is tested by estimating the impact of the trade reforms on gender wage differentials using four cross sections of household survey data from the National Sample Survey Organization between 1983 and 2004. The data has been aggregated to the industry level and merged with several other industry-level data sets for international trade, output, and industry structure. The relationship between the male-female wage gap and variations across industry and time in the exposure to competition from international trade have been examined, while controlling for changes in worker characteristics and domestic concentration.

The OLS and Fixed Effects techniques at the industry level have been employed to estimate the relationship between the male-female residual wage gap and measures of domestic concentration and international trade competition. Results indicate that increasing openness to trade is associated with a widening in the wage gap in India’s concentrated manufacturing industries. Results show that groups of workers who have weak bargaining power and lower workplace status may be less able to negotiate for favourable working conditions and higher pay, a situation that places them in a vulnerable position as firms compete in the global market place. Rather than competition from international trade putting pressure on firms to eliminate costly discrimination against women, pressures to cut costs due to international competition appear to be hurting women’s relative pay. The results are consistent with several previous studies on India that have found negative social impacts resulting from the introduction of trade policy reforms.

**Reilly & Dutta (2005)**, in their study “**The Gender Pay Gap and Trade Liberalisation: Evidence for India**” examine the magnitude of the gender pay gap in India and its relationship to a set of trade liberalisation measures. India witnessed a radical change in the economic policy



with rapid liberalisation of the trade and industrial policy regimes. However, this set of reforms did not have induced increases in participation in the wage employment sector for either men or women. On the contrary, the male participation rate declined marginally over the period covering 1983 to 1999, and the female rate declined more substantially over the same period. The study investigates the extent to which economic reforms specifically trade reforms in India have affected the relative wage position of women.

A major thrust of this analysis is an emphasis on the computation of industry-specific gender pay gaps. The study focuses on quantification of the magnitude of these effects and eventually assesses whether there is a relationship between industry-specific gender pay gaps and other industry-specific measures that capture the effects of trade liberalization programmes in India.

The individual-level data is taken from the National Sample Survey employment surveys and is restricted to males and females in wage employment and aged between 15 and 65 years old. The industry-specific tariff data for 1983-84, 1993-94 and 1999-2000 are constructed as simple averages of the basic customs tariff. The trade data on import and export shares for the manufacturing industries are compiled from official publications of the Indian government. These trade variables are computed as the proportion of imports (or exports) in industry  $k$  as a proportion of total imports (exports) aggregated over all  $k$  industries. The methodology designed to calculate gender pay gaps relies on the specification of a well defined human capital model augmented by factors designed to capture compensating differentials and monopoly rents associated with an individual's job or sector of attachment.

The methodology consists of specification of separate male and female wage determination processes. OLS is applied to the wage determination equations yielding unbiased coefficient estimates for the explanatory variables. The OLS procedure allows for the decomposition of the overall gender pay gap into endowment and treatment components using the conventional index number decomposition. The endowment effects comprised about two-thirds of the overall wage offer differential and about one-quarter of this were accounted for by gender differentials in industry affiliation. The treatment effect was more modest in magnitude and suggested that unequal gender treatment provided an average hourly wage advantage for Indian men of about 18% in 1983 with the point estimate declining to about 13% in 1999. However, the differential in point estimates across these two years was not found to be statistically significant at a conventional level.

A methodology suggested by Horrace and Oaxaca (2001) is used to compute industry specific gender pay gaps and the relationship with trade-related measures (e.g., tariff rates and trade shares) is examined econometrically within a GLS framework. Marginal evidence is found that the trade-related measures are important determinants of female wage disadvantage and, on balance; they appear to have exerted a relatively benign influence on the evolution of the gender pay gap in India.

The finding of a relatively stable average gender pay gap in India and the absence of any obvious trade-related effects represents only a very partial assessment of the effect of trade liberalization on women's relative position in the Indian labour market. The paper suggests that the stability observed in the gender pay gap is attributable to the selective withdrawal of the less able Indian women. Both the unadjusted and the residual gender pay gap appear to have exhibited a degree of stability over a period of very rapid labour market change in India. The role of

unemployment and the changing nature of employment contracts through the use of greater informalisation, sub-contracting and out-sourcing have not been explored in this paper. If these issues have a strong gender dimension, they may have had adverse implications for the welfare of those women participating in the labour market.

**Oostendorp (2004)**, in the paper “**Globalization and Gender Wage Gap**” conducts a cross-country study of the impact of globalization on the occupational gender wage gap, based on the ILO October Inquiry. The study analyzes data for the years 1983-1999. 18931 observations are used for a total of 83 countries and 161 occupations.

Globalization can be measured along different dimensions. In this paper, trade is seen as a percentage of GDP (in current prices) and the FDI net inflows as a percentage of GDP. The results show a negative cross-country relationship between these measures of globalization and the occupational gender wage gap.

Oostendorp conducts a regression analysis to determine the impact of trade and FDI on the gender wage gap, using OLS. The dependent variable is the Gender Wage gap and the independent variables are Log GDP per capita, trade (as a percentage of GDP), FDI (as a percentage of GDP), dummies for occupation and year. The regression is run for lower and lower middle income countries, and higher and higher middle income countries separately.

As measures of trade, aggregate trade (in current and constant prices) and FDI net inflows (in current prices) as a percentage of GDP are taken. Also, a measure of sectoral trade based on the World Bank Trade and Production Database which contains data on trade, production and tariffs for 67 developing and developed countries at the industry level over the period 1976-1999 are used. The use of sectoral trade data allows for more room to exploit the more direct link between sectoral trade and the gender wage gap for occupations in a sector.

Results of the OLS Analysis conducted shows that there is a significant positive impact of GDP per capita on the gender wage gap in poorer countries. The effect of trade is generally negative (although not always significant), that is, the gender wage gap tends to fall with the openness of the economy and as far as the FDI net inflows are concerned, a more ambiguous pattern is found, with a negative and a positive but insignificant effect for the poorer and richer countries respectively. The results state that the occupational gender wage gap appears to be narrowing with increases in GDP per capita. There is a significantly narrowing impact of trade and FDI net inflows on the occupational gender wage gap for low-skill occupations, both in poorer and richer countries, and for high-skill occupations in richer countries. Also there is a lack of evidence of a narrowing impact of trade, but there is evidence of a widening impact of FDI net inflows on the high skill occupational gender wage gap in poorer countries. This shows that, on balance, globalization may not lower, and in some instances may increase gender gaps. This finding complements several other studies documenting an increase in wage inequality after trade liberalization in a number of developing countries. It is also found that wage-setting institutions have a strong impact on the occupational gender wage differentials and may interfere with the impact of globalization on the gender gap.

**Ramya Vijaya (2003)** in her report “**Trade, Skills and Persistence of Gender Gap: A Theoretical Framework for Policy Discussion**” explores the impact of trade openness on gender divergence in skills in developing economies. This study combines the Heckscher-Ohlin

trade perspective with the evidence of the increasing feminization of the low-skilled export labour force.

This paper introduces the gender differences in labour demand into the H-O based theoretical framework and also looks at the data trends to test the presence of a trade related gender biased skill divergence. The analysis indicates that the current pattern of trade led job growth has the potential to contribute to the 'broader structure of disadvantage' i.e. it reinforces the existing preferences for greater investment in male human capital formation by creating an employment structure that lowers the incentives to invest in education for women and produces a decumulation effect on women's human capital. Therefore, mere increase in employment or labour force participation of women cannot guarantee sustained improvements in their quality of life and human capabilities.

The study further analyzes the trends in gender differentiated skills data, school enrolment ratio and the average years of schooling in the adult population. Data trends strongly suggest that the trade-related employment expansion has not led to changes in the traditional patterns of gender biases in skill investments. These trends therefore seem to support the theoretical hypothesis regarding gender skill divergence. In order to establish the causality between trade expansion and changes in the incentive to invest in skills, the study carries out a cross-country regression analysis using the available data.

The OLS method is used to estimate the empirical equation for a group of 50 countries. It is found that higher growth rates of GNP and public education expenditure lead to a narrowing of the gap between male and female enrolments. The coefficient on the trade variable is not statistically significant which indicates that the impact of higher trade on the enrolment gap is not significant. The results also highlight that countries which start out with a gap between adult male and female skills, trade has a positive impact on the change in the enrolment gap i.e. the enrolment gap increases further. The regression analysis supports causality between trade participation and gender divergence in education investments. Larger trade volumes cause the secondary school enrolment gender gap to increase further in countries that have larger gaps between the average levels of male and female adult education.

This research concludes that in low-skilled developing countries where a gender gap in education exists, trade related employment trends have the potential to establish an employment structure that lowers women's incentives to invest in higher education while allowing more opportunities for skills up gradation for men. Therefore, existing gender gaps in education are reinforced and widened.

**Artecona & Cunningham (2001)**, in their paper **"Effects of Trade Liberalization on Gender Wage Gap in Mexico"** examine the change in the gender wage gap in the manufacturing sector in urban Mexico over the trade liberalization period (1987-1993). This paper focuses on whether or not the gender wage gap in the manufacturing sector changed due to trade liberalization and whether or not this can be attributed to a decrease in discrimination due to the increased international competition. A difference-in-differences approach is used where the conditional gender wage gap in firms that were competitive before the trade reforms (and thus their level of competition could not have been affected by trade reforms) is compared to the conditional gender wage gap in firms that were protected from internal (via non-competitive markets) and external (via trade barriers) competition in the pre-reform period, but opened to

competition in the post reform period by lower trade barriers that also lowered the level of internal protection.

It is said that since trade liberalization increases competition, it should decrease excess profits and eliminate those resources that may be used to create the wedge between male and female wages. As economies open, foreign producers will enter profitable national markets. Domestic producers in the (formerly concentrated) trade-impacted industries will have to lower their costs and increase their productivity to stay in business, so they will no longer be able to afford the luxury of discrimination. Thus, gender wage discrimination should decrease in those industries. However, the gender wage gap should not change in the highly concentrated non-trade-impacted industries, especially those that have monopsony power, since those firms still earn profits that may be used to discriminate.

However, it was found that both men's and women's wages and the gender wage gap increased after the trade liberalization period. By Becker's theory of discrimination, the gender wage gap should be higher in the concentrated industries than in the non-concentrated industries in the pre-reform period. The wage gap should decrease the most in concentrated industries that were exposed to competition through lower trade barriers. Regardless of the degree of concentration (i.e. absence of competition) or openness to trade, real log wages increased for both men and women. Despite the overall increase in real wages, the gender wage gap became worse. It only improved in the non-concentrated non-trade impacted industries, an industry that should not have felt the effects of trade and should have had low gender wage gaps to begin with. Among the group that should have benefited from trade - those in the trade impacted concentrated industries - the gender wage gap became even more in favour of men, thus supporting the view that trade is less beneficial to women than men. Although these results suggest that women do not reap the benefits of trade, it is important to note that the analysis does not take into account the fact that men and women have different productivity-related characteristics.

A Mincer earnings equation is estimated to explain the log wages of men and women and the residuals are preserved. The difference between the average male and female *residual* log wages in each industry is calculated, thereby omitting observable productivity characteristics. This residual is used as the dependent variable in an OLS equation that controls for changes over time, industry concentration, and exposure to trade openness. The difference in men's and women's wages can partly be explained by differential levels of observable human capital, i.e. education and work experience. The average returns to human capital can be estimated using a typical Mincerian wage equation that regresses the log hourly wage on observable productivity characteristics.

A difference-in-differences methodology is employed to control for changes over the period that were not a result of the trade liberalization process and changes in wage due to trade liberalization that had nothing to do with the change in competitiveness of certain industries. A change in the wage differential between non-competitive industries that were affected by trade (trade impacted industries) and non-competitive industries that were not affected by trade (non-trade impacted industries) served as the treatment variable since the former would become competitive through the liberalization period while the latter would remain non-competitive (and maintain their profits that allow them to wage discriminate). Thus, a change in the wage differential between these two types of industries was due to both changes caused directly by

lower trade barriers and indirectly through increased competition created by lower trade barriers. Differencing the differences from each pair gave the change due to trade, working through concentrated industries alone.

Trade liberalization was found to be associated with higher gender wage gaps in the Mexican manufacturing sector, but this is likely due to an increased premium to men's higher (experience) skills; the discrimination component of wage differentials seems to fall with competition that is brought about by international competition. A comparison of men's and women's wages before and after Mexico's trade liberalization period shows that the wage gap in the manufacturing industry increased. However, the increase in the wage gap appeared to be due to general movements in the economy over the period and an increased premium to skills, as found by Hanson and Harrison (1999). Suggestive evidence was found (significant at the 20 percent level) that trade liberalization leads to a decrease in wage discrimination. In particular, those industries that were forced to become competitive due to trade liberalization saw a fall in the gender wage gap. These findings indicate that trade may be beneficial to women by decreasing wage discrimination, but an improvement in women's relative wages will depend on improving women's skills to better compete in the newly competitive markets.

**Black & Brainerd (2002)** in their paper, **“Importing Equality? The Impact of Globalization on Gender Discrimination”** test the hypothesis (based on Becker 1957) that increased competition resulting from globalization in the 1980s forced employers to reduce costly discrimination against women. The empirical strategy exploits differences in market structure across industries to identify the impact of trade on the gender wage gap. They compare the change in the residual gender wage gap between 1976 and 1993 in concentrated versus competitive manufacturing industries, using the latter as a control for changes in the gender wage gap that are unrelated to competitive pressures.

In the mid-to-late 1970s and early 1980s industries such as the banking, trucking, telecommunications and airline industries, and many other industries confronted intensified competition in the form of increased imports from foreign competitors. This paper focuses on the latter form of increased competition, and attempts to answer the question as to whether increased trade has led to a decline in discrimination and, as a result, contributed to the improvement in relative female wages.

The analysis has been carried out using both the 2002 Population Survey and the 1980 and 1990 Censuses, and the relationship between changes in trade and changes in the gender wage gap across industries as well as across metropolitan areas has been examined. The wage data are broken down by concentrated and competitive industries. Differing changes in observable characteristics across industries and regions were controlled for. As a first step the study tests the links between trade and the residual gender wage gap. They employ OLS technique to a cross section of long differenced data. The coefficient on the interaction term between the import ratio and industry concentration measures the impact of the change in international competitiveness on the change in the gender wage gap in concentrated industries over a specified time period.

This research has largely focused on the contribution of trade to rising wage inequality in the United States, and particularly on the link between trade and the deteriorating fortunes of less skilled workers. The results illustrate the impact of trade on the wages of less-skilled workers

relative to more-skilled workers. If trade disproportionately hurts less-skilled workers and women comprise a disproportionate share of less-skilled workers, then trade will affect the relative wages of men and women. If this is the case, it is expected that trade reduces women's wages relative to men's wages, and an increase in the gender wage gap will be observed in trade-impacted industries (or, the gender wage gap should narrow more slowly in trade-impacted industries).

They find that U.S. manufacturing industries that are relatively less competitive domestically but exposed to increasing competition from imported goods show evidence of reduced wage discrimination against women. This approach compares the impact of trade in concentrated versus competitive industries, and gives the net of the gains in relative female wages that occurred over the period for other reasons. The results indicate that the residual gender wage gap narrowed more rapidly in concentrated industries that experienced a trade shock than in competitive industries that experienced a trade shock.

**Berik, Rodgers & Zveglic (2003)** in their paper "**International Trade and Wage Discrimination: Evidence from East Asia**", explore the impact of competition from international trade on wage discrimination by sex in two highly open economies, Korea and Taiwan. The study explicitly tests Becker's theory that discrimination is incompatible with rising competitiveness. The approach centers on comparing the impact of international trade on wage discrimination in concentrated and non-concentrated sectors.

The study suggests that some of the observed wage differentials may be explained by wage discrimination against female workers. Their study uses an approach similar to one used by Arcetona & Cunningham (2001) wherein they isolate the impact of international trade competition on discrimination by estimating the effect of international trade openness on the residual wage gap in concentrated industries. The empirical model is estimated using a panel data set of residual wage gaps, trade ratios, and alternative measures of domestic concentration for Taiwan (China) and Korea during the 1980s and 1990s.

In both economies, trends in international trade were accompanied by structural changes in manufacturing. Two decades of structural change in both economies also saw major changes in the labour market. Labour force participation rates for men fell and for women rose. Despite women's relative gains in labour-market qualifications, Taiwan (China)'s average female-male wage ratio in manufacturing dropped from 66% in 1981 to 60% in 1993, with a reversal to 67% by 1999. Korea's female to male wage ratio rose fairly steadily throughout the period, from 47% in 1980 to 58% by 1998.

The residual wage gap in manufacturing changed over time in both economies. Trends in wage gaps are separated by concentrated and less concentrated industries. For Taiwan (China), the residual wage gap was lower in concentrated industries than in non-concentrated industries. In both concentrated and less concentrated industries, the residual wage gap rose sharply until the mid-1990s and diminished somewhat during the late 1990s. Considering the trends in the trade ratios, the period of rising residual gaps coincided with a fairly steady increase in both export and import ratios, while the narrowing in the residual wage gap toward the end of the period coincides with a flattening in trade ratios.

These patterns suggest that greater openness to foreign trade is associated with a larger

differential between male and female wages, even after controlling for skill characteristics. Further analysis showed that real wage levels for both men and women are higher in concentrated industries than non-concentrated industries. The most likely explanation given for this was the ability of firms in concentrated industries to pay higher wages to all workers.

The empirical model takes the null hypothesis as increased industry competitiveness from international trade places pressure on firms to reduce costly discrimination against women. They isolate the impact of increased trade competition from other contemporaneous events that are unrelated to participation in international markets by controlling for differences in domestic market structure across industries. Hence, any observed reduction in discrimination against female workers in relatively concentrated industries was attributed to the competitive forces from international trade rather than to domestic pressures.

The model first estimates the difference between men and women in average log residual wages in a particular industry in a particular year. The estimation equation includes a measure of domestic concentration by industry, the import ratio (and alternatively the export ratio) by industry and year and the interaction between industry concentration and the import ratio as explanatory variables. The interaction term was the key variable of interest since its coefficient represented the impact of international trade competition on the average residual wage gap in concentrated industries. The dependent variable is constructed from panel data on average residual wages by industry and year. To construct the residual gap, a fairly standard wage equation is estimated for male workers in each year. The observable characteristics include education, experience, regional location, and worker status. These regressions exclude occupation variables since labour market discrimination may play a role in occupational attainment. Predicted log wages for male and female workers are then calculated using coefficients from the male wage regression. The difference between actual log wages and predicted log wages yields residual wages, and the difference between male and female residual wages yields the residual gender wage gap.

Using the OLS approach similar to Black & Brainerd, the results show that, in Taiwan (China), increased openness to imports over time in concentrated industries is positively and significantly associated with a larger residual wage gap, and, by implication, increased discrimination against female workers. OLS results for Korea indicate that higher export ratios in concentrated industries are positively associated with the residual gender wage gap. A Generalized Least Squares estimation procedure that corrects for random effects is applied to the panel data set.

In Taiwan (China), greater trade openness in concentrated industries is associated with wider residual wage gaps between men and women, particularly when openness is measured by the manufacturing-sector import ratio. Import competition appears to widen the wage gap by adversely affecting women's relative employment prospects, leading to a loss of bargaining power for women. Women thus appear to be bearing the brunt of employers' competitive cost-cutting efforts. For Korea, the positive relationship between trade openness in concentrated industries and the residual wage gap continues to be evident for exports. Results for both economies imply that concerted efforts to enforce equal pay legislation and apply effective equal opportunity legislation are crucial for ensuring that women's pay gains will match those of men in a competitive environment.

**Yamamoto (2007) in “Trade, Technology and Gender Wage Gap: A Case of Japan”** assesses the impacts of increases in international trade on gender wage discrimination in Japan. It uses interactive variables of trade and concentration of the firm in industries and that of trade and high-tech industries. Japan’s value and volume of trade have increased over time, with steady gains in current account. The impact of trade expansion however, may not necessarily benefit workers who engage in the production of the tradable goods and those beneficiaries may vary for women and men. Results for the case of Japan contradict with the neoclassical argument.

In the study, the authors have examined the impacts of trade openness in the industries with relatively high domestic concentration and with relatively high-tech production process. In both scenarios, increased trade competition from abroad worsened the gender wage inequalities, in contrast to neoclassical argument. The empirical result implies that women are bearing a disproportionately large share of the costs of trade liberalization. Increased export share, on the other hand, narrows gender wage inequalities, especially among high-tech industries.

This study uses a model similar to one presented in Black and Brainerd (2004) and Berik, Rodgers and Zveglic (2004). High-tech industries, which produce and export innovated products and thus face less price competition than industries which produce low-tech labour intensive products, can afford to discriminate on wages against women compared to low-tech competitive industries, like the concentrated sectors can discriminate on wages against women compared to competitive sectors. As far as the export share is concerned, gender wage gap widened in competitive (or low-tech) industries that experienced greater increase in export share than in those that experienced little exports. Among concentrated (or high-tech) industries, an increase in exports reduced gender wage inequality.

It was found that the residual wage gap increased in concentrated industries relative to competitive industries, or in other words, that gender wage gap declined more in competitive industries than in concentrated industries in absence of import penetration. This is consistent with Becker (1957). Results for increased trade competition however, especially the one from Asian neighbouring countries, was positively associated with wage discrimination against women in all industries, resulting in wider gender wage gap. In competitive industries, the gender wage gap grew more in industries that experienced greater increases in import penetration than in those that experienced little or no competition from abroad. In contrast to neoclassical theory, the gender wage inequality widens in concentrated industries that experienced greater increase in import penetration than in those that experienced little or no competition from abroad.

The results indicate that in competitive industries, increased trade competition adversely affected both male and female wages, but more so for the latter. Among concentrated industries, increased trade competition is positively associated with both male and female wages, but benefiting more for men, thus resulting in widening gender wage gap.

As far as the export share is concerned, gender wage gap widened in competitive industries which experienced greater export by suppressing women’s wages. Among concentrated industries, increase in export share led to a reduction in gender wage inequality in industries that experienced greater exports. The growth of exports in concentrated industries is negatively associated with residual male wages and positively associated with residual female wages; however both are not statistically significant. Therefore, causes of narrowing export effects on



gender wage inequalities are not clear.

The high-tech industries experience narrower wage gap relative to low-tech industries. Technological advancement is positively associated with women wages. In other words, that gender wage gap increased more in low-tech industries in absence of import penetration. In low-tech industries, the gender wage gap grew more in industries that experienced greater increases in import penetration than in those that experienced little or no competition from abroad.

In conclusion, it can be said that research and monitoring of gender aspects of trade expansion and liberalisation is a high priority with respect to various sectors. Therefore, national policies need to act to reduce gender-based constraints to trade expansion and to enhance gender-equalising trends associated with trade, as well as to offset any negative consequences of trade in terms either of widening overall gender inequalities or of specific losses for particular groups of women.

### 3. DATA DESCRIPTION

The study uses level 4 and level 5 of the NSS survey on 'Employment & Unemployment and Migration Particulars'. Levels 4 and 5 provide information at the unit level on sex, age, marital status, relation to head, general education, technical education, usual principal activity status, usual principal activity- NIC 2004 code, wage and salary earned in cash, kind and total. The two levels have been merged to get the above information at the unit-level together to analyze the differences in average monthly wages of males and females and the differences in gender employment at the industry level as well as the sector level. Dummy variables have been created to study the correlations of each of the qualitative variables mentioned with wages.

The impact of trade will be studied by classification of industries in the sectors of Manufacturing and Services into export and non-export oriented industries. The average wages and the differences in employment will consequently be compared in export and not export oriented industries in each sector. Due to limitations of data in the Agricultural sector, the study only focuses on the differences in wages and employment of men and women.

Table 3.1 summarizes the total employment, total male and female employment and their average monthly wages in three sectors of agriculture, manufacturing and services.

#### 3.1. Employment and Average Monthly Wages in Agriculture, Manufacturing and Services

Sector	Total Employment	No. of Men	No. of Women	Average Wages of Men (in cash) (in Rs./month)	Average Wages of Women (in cash) (in Rs./month)
Agriculture, Fishing, Mining & Quarrying	101548	69188	32360	3285.61	936.82
Manufacturing	21784	17098	4686	4292.74	1063.76
Services	76280	64495	11785	4259.88	3168.83

At the disaggregated level in each sector, it is observed that, **several industries had very low employment for men and women. Table 3.2. describes the three sectors of Agriculture, Manufacturing and Services after exclusion of the industries with low employment figures.** Our dataset consists of a total of 55 industries in the sector of Agriculture, Fishing, Mining and Quarrying. The total employment is 100611 of which 68,342 are men and 32,269 are women. Manufacturing sector consists of a total of 218 industries. The total employment is 14,608 of which 10,352 is the male employment and 4,256 are female and the Services sector consists of 181 industries in our sample. The total employment is 65,446 of which 54,250 are men and 11,196 are women.

**3.2. Employment and Average Monthly wages in Agriculture, Manufacturing and Services (after elimination of the industries with low male and female employment)**

Sector	Total Employment	No. of Men	No. of Women	Total No. of Industries	Percentage Gap in Male and Female wages (in cash) (Rs/month)	Difference in Gender Employment
Agriculture, Fishing, Mining & Quarrying	100611	68342	32269	55	53.48	36073
Manufacturing	14608	10352	4256	218	323.36	6096
Services	65446	54250	11196	181	-7.62	43054

It is observed from the table 3.2 that **Manufacturing sector** shows the **highest average monthly wage gap between males and females** and the **lowest employment amongst all three sectors.** It is also evident from the table above that **women are in a better position than men** as far as monthly wages are concerned in the **Services sector** in our sample. **Agriculture is the largest employer** in absolute sense with **men having higher average monthly wages as compared to women by almost 53.5%.** However, the agricultural sector accounts for a small percentage of India's total share and our dataset does not include industries that are export oriented in the Agricultural sector. We have thus looked at the wage and employment differences in this sector.

As mentioned earlier, our dataset consist of 180655 observations. Agricultural sector consists of 10611 observations, Manufacturing sector consists of 14608 and Services consists of 65446 observations. We attempt to ascertain the impact of gender on the wage differences between men and women in each sector. We have further classified Manufacturing and Services sector into export and not export oriented industries.

Our dependent variable is wagecash/wagetotal. Our independent variables are age, export intensity and the dummy variables that have been created namely dgender, dhighedu, dtechedu, rgenedu, dhead, dmstatus, dliterate, dsselfemp, dcasual, dsalaried, dexporiented.

Descriptions of the dummy variables created are as follows:

a. **dhighedu** = 1 if genedu=13,14 (Post-graduate or higher)

0 if genedu = otherwise

b. **rgenedu** = 0 if genedu = 01, 02, 03, 04, 05

1 if genedu = 06, 07

2 if genedu = 08

3 if genedu = 10

4 if genedu = 11

5 if genedu = 12

6 if genedu = 13

7 if genedu = 14

c. **dliterate** = 0 if genedu = 01

1 if genedu = otherwise (Literate)

1. Status

d. **dselfemp** = 1 if status = 11, 12, 21 (Self- employed)

0 if status = otherwise

e. **dsalaried** = 1 if status = 21 (Salaried)

0 if status = otherwise

f. **dcasual** = 1 if status = 41, 42, 51 (Casual)

0 if status = otherwise

2. Marital status

g. **dmstatus** = 1 if mstatus = 2 (Married)

0 if mstatus = otherwise (Single, widowed etc.)

3. Relation to head

h. **dhead** = 1 if reltohead = 1 (The head himself/herself)

0 if reltohead = otherwise

4. Sex

i. **dgender** = 1 if sex = 2(female)

0 if sex = 1(male)

5. Technical Education

j. **dtechedu** = 0 if techedu = 1 (No technical education)

1 if techedu = otherwise

6. Export Orientation

k. **dexported** = 1 if export oriented

0 if not export oriented

Each sector is separately studied at the **3 digit NIC level** with respect to the percentage difference in the average monthly male-female wages, absolute difference in the employment and the correlation of each dummy variable created with wagecash and wagetotal.

#### 4. IMPACT ON MANUFACTURING

Table 4.1 gives the description of the industries with the percentage difference in male and female monthly wages measured in cash (in Rs/month) as well as absolute difference in male and female employment in each of these industries. **Manufacture of Textiles** shows a percentage gap of almost 900% between the average monthly male and female wages which is the highest in the manufacturing sector. Industry code 160 i.e. **Manufacture of tobacco products** [tobacco related products are also included] exhibits a gap of about 150% between male and female average monthly wages in cash in our sample. The magnitude of the percentage gap in the

average monthly wages in manufacturing sector is much higher as compared to the agricultural sector.

As far as absolute employment is concerned, manufacturing sector is the smallest employer amongst all three sectors in our sample. **‘Manufacturing of Wearing Apparel except Fur Apparel’** exhibits the largest absolute difference in male-female employment. The industry with the lowest percentage gap in average monthly wages of male and female i.e. **‘Manufacture of Tobacco Products’** also displays higher female employment than male.

#### 4.1. Percentage gap in the Average Monthly Male-Female Wages and Absolute Difference in Gender Employment in Manufacturing Industries (at 3 digit NIC code)

NIC Code	Description	Average Wages (in cash) for Men (in Rs./month)	Average Wages (in cash) for Women (in Rs./month)	Percentage Gap Male Fem Wages (in C
153	Manufacture of grain mill products, starches and starch products, and prepared animal feeds	1841.17	356.93	415.83
154	Manufacture of other food products	1925.01	539.32	256.94
160	Manufacture of tobacco products [ tobacco related products are also included while preliminary processing of tobacco leaves is classified in class 0111]	2250.36	888.21	153.36
171	Spinning, weaving and finishing of textiles.	2834.11	541.68	423.21
172	Manufacture of other textiles	4132.79	407.22	914.88
181	Manufacture of wearing apparel, except fur apparel [this class includes manufacture of wearing apparel made of material not made in the same unit. Both regular and contract activities are included]	1219.74	472.54	158.13
202	Manufacture of products of wood, cork, straw and plaiting materials	902.03	312.78	188.39
242	Manufacture of other chemical products	5981.95	1816.34	229.34
269	Manufacture of non-metallic mineral products n.e.c.	3177.90	526.91	503.12
369	Manufacturing n.e.c. (jewellery)	2197.83	448.73	389.79

#### 4.2. Descriptions of Quantitative variables in Manufacturing sector

Variable	Obs	Mean	Std. Dev.	Min	Max
Wagecash	14608	368.53	3574.90	0	425000
Wagetotal	14608	378.67	3983.71	0	475000
Age	14608	35.64	12.78	18	92

Quantitative variables of our dataset of manufacturing sector have been summarized in the table above. Average wages in cash and in total in the manufacturing sector are approximately Rs. 370

per month. The average age in the manufacturing sector in our dataset is about 35 years. Maximum age in our dataset is 92 years, the reason being we have included self employed category also.

Industries 171 i.e. Spinning, weaving and finishing of textiles, 172 i.e. Manufacture of other textiles, 181 i.e. Manufacture of wearing apparel, except fur apparel [this class includes manufacture of wearing apparel made of material not made in the same unit. Both regular and contract activities are included] and 369 i.e. Manufacturing n.e.c. (Jewellery) have been classified as export oriented industries. The table below describes the correlations between each variable and the wages in this sector

**4.3. Correlation Matrix of variables with wages (in cash and total) in manufacturing sector**

	Wagecash	Wagetotal
Age	0.0056	0.0061
Genedu	0.0634	0.059
rghenedu	0.0846	0.0789
dselfemp	-0.0917	-0.0846
dsalaried	0.1242	0.1149
dcasual	0.0158	0.0144
dmstatus	-0.0071	-0.0078
dhead	0.0329	0.031
dliterate	0.0315	0.0292
dhighedu	0.0963	0.091
dtechedu	0.1074	0.1039
dgender	-0.046	-0.0426
dexported	0.0028	0.003

Table 4.3. shows that variables like dselfemp, dmstatu and dgender have negative correlations with wages in cash and in total. This implies that individuals who are currently married get lower wages and if the individual is a female, she obtains lower wages. Also, the results depict that individuals who are self employed obtain lower wages in cash as well as in total. In the case of manufacturing, the signs for correlation between wages and the variables depicting various types and levels of education are all expected and positive. These are the correlation between wages and dtechedu/dliterate/dhigheredu/genedu/rghenedu.

Salaried and casual labourers tend to have a positive correlation with wages (higher wages) but the correlation is not significant. It is also important to note that export oriented manufacturing industries show a positive correlation with wages although the magnitude of correlation is weaker than that in the services sector (shown below).

**5. IMPACT ON SERVICES**

Table 5.1 gives the description of the industries with the percentage difference in male and female wages measured in cash (in Rs./month) as well as absolute difference in employment of men and women in these industries. Industry 525 i.e. **‘Retail Trade (not in stores)’** is characterized with the highest percentage gap in male and female wages measured in cash whereas industry 642 i.e. **‘Telecommunications [Production of radio and television programmes, whether or not combined with broadcasting]’** is characterized with women earning a higher monthly wage on an average than men.

Comparing the industries on the basis of employment differences, we observe that Industry 452 i.e. **‘Building of complete constructions or parts, Civil engineering’** exhibits the largest difference in male and female employment of the magnitude of 10,690. Industry 950 i.e. **‘Private households with employed persons (Includes the activities of private households employing all kinds of domestic personnel such as maids, cooks, gardeners, gatekeepers, secretaries, governess, baby sitters etc.)’** on the other hand, exhibits higher female employment than male employment..

**5.1. Percentage gap in the Average Monthly Male-Female wages and Absolute Difference in Gender Employment in Services Sector Industries (at 3 digit NIC code)**

NIC Code	Description	Average Wages (in cash) for Men (in Rs./month)	Average Wages (in cash) for Women (in Rs./month)	Percentage Gap Male Fem Wages (in C
452	Building of complete constructions or parts thereof; civil engineering	3315.48	1100.46	201.28
521	Non-specialized retail trade in stores	729.66	161.38	352.13
522	Retail sale of food, beverages and tobacco in specialized stores	431.94	148.19	191.47
523	Other retail trade of new goods in specialized stores	882.65	740.76	19.16
525	Retail trade not in stores	2309.45	181.35	1173.47
552	Restaurants, bars and canteens	1051.65	388.88	170.43
602	Other land transport	2796.72	2168.81	28.95
642	Telecommunications [Production of radio and television programmes, whether or not combined with broadcasting, is classified under class 9213.]	5882.10	8397.87	-29.96
651	Monetary Intermediation [This group includes the obtaining of funds in the form of deposits]	12719.67	12103.02	5.09
659	Other financial intermediation. [This group includes financial intermediation other than that conducted by monetary institutions.]	5911.07	8271.25	-28.53
722	Software consultancy and supply	21010.16	16870.52	24.54

741	Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy	5923.40	5635.32	5.11
749	Business activities n.e.c.	2950.91	2384.58	23.75
751	Administration of the State and the economic and social policy of the community	8467.15	6534.62	29.57
752	Provision of services to the community as a whole	11052.44	8828.06	25.20
801	Primary education	7857.47	4521.19	73.79
802	Secondary education	9310.79	7650.41	21.70
803	Higher education [Includes post-secondary/senior secondary sub-degree level education that leads to university degree or equivalent.]	10367.19	12904.49	-19.66
809	Adult and other education	3174.53	2397.29	32.42
851	Human health activities	4379.09	5165.67	-15.23
853	Social work activities	5204.10	2131.37	144.17
900	Sewage and refuse disposal, sanitation and similar activities	2639.07	2267.23	16.40
919	Activities of other membership organisations	3532.57	1674.49	110.96
930	Other service activities	367.64	442.19	-16.86
950	Private households with employed persons. [Includes the activities of private households employing all kinds of domestic personnel such as maids, cooks, gardeners, gatekeepers, secretaries, governess, baby sitters etc.]	2654.39	1951.97	35.99

## 5.2. Descriptions of quantitative variables in services sector

Variable	Obs	Mean	Std.	Min	Max
Wagecash	65446	813.2046	2363.888	0	500000
Wagetotal	65446	826.8419	2530.306	0	550000
Age	65446	37.35431	12.26478	18	93

Table 5.2. summarizes the quantitative variables in services sector dataset considered in this study. Wages on an average in the services sector are Rs. 820 per month, which is significantly higher than that in the manufacturing sector. The average age in our sample of services sector is approximately the same as that in the manufacturing sector i.e. 37 years.

Industries 642 i.e. Telecommunications [Production of radio and television programmes, whether or not combined with broadcasting, is classified under class 9213.], 722 i.e. Software consultancy and supply, 741 i.e. Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management



consultancy and 749 i.e. Business activities n.e.c. have been classified as export oriented industries and the correlation of dummy variable created for export orientation is studied with the wages to determine the impact of trade on this sector. Table 5.3. is a correlation matrix stating correlation of each independent variable considered in the study with wages in the services sector.

### **5.3. Correlations Matrix of variables with wages (in cash and total) in services sector**

	<b>Wagecash</b>	<b>Wagetotal</b>
<b>Age</b>	0.0722	0.066
<b>Genedu</b>	0.2219	0.2068
<b>rgenedu</b>	0.2643	0.2465
<b>dselfemp</b>	-0.2442	-0.232
<b>dsalaried</b>	0.3274	0.3096
<b>dcasual</b>	-0.0316	-0.0285
<b>dmstatus</b>	0.0498	0.0451
<b>dhead</b>	0.0635	0.0596
<b>dliterate</b>	0.1015	0.0946
<b>dhighedu</b>	0.2472	0.2309
<b>dtechedu</b>	0.1666	0.1537
<b>dgender</b>	0.0105	0.0099
<b>dexported</b>	0.0553	0.052

The table shows that all variables except for *dselfemp* and *dcasual* have a positive relation with wages. Thus, for literacy, general education, technical and higher education the positive sign is as expected. The correlation between *dselfemp* and *wagecash* is -0.2442 which means a strong negative correlation i.e. if the person is self employed then the wages received by him/her are lower. This finding is therefore consistent among the three sectors, though the negative correlation is stronger in the case of agriculture (shown below) and services as compared to the manufacturing sector. Similarly a casual worker gets lower wages as compared to the rest. Although the correlation is hardly significantly negative, this result still contrasts with what we found for the manufacturing sector as well as the agricultural sector. As usual, salaried employees get higher wages as the correlation between *dsalaried* and wages is fairly large and positive.

The correlation between *dgender* and wages is positive but weak. Also, we observe that *dexported* which is the dummy variable constructed for describing export orientation of firms, has a weak but positive correlation with wages in cash and in total. The magnitude of correlation is however stronger than the manufacturing sector. This implies that individuals employed in export oriented industries in the services sector are obtaining higher wages as compared to the rest.

## **6. IMPACT ON AGRICULTURE**

Table 6.1 gives the description of the industries with the percentage difference in male and female monthly wages measured in cash (in Rs/month) as well as the absolute difference in the

employment of men and women in each of these industry in our dataset for Agriculture. **Industry 141 i.e. Quarrying of stone, sand and clay** displays the highest percentage gap of about 303% in male and female monthly wages measured in cash whereas **industry 050 i.e. Fishing, operation of fish hatcheries and fish farms; services, activities incidental to fishing** exhibits a gap of about 30% between Male and Female monthly wages in cash. Comparing the industries on the basis of employment differences, we observe that **Industry 011 i.e. 'Growing of crops; market gardening; horticulture'** is the largest industry in the agricultural sector. Almost 90% of the people are engaged in this industry in agriculture. It also displays the largest difference in male and female employment of the magnitude of 34,756. It exhibits a percentage gap of almost 55% between male and female average monthly wages. 'Farming of Animals' i.e. industry code 050, on the other hand, shows higher female employment with 2,006 women employed and 1,727 men employed.

**6.1. Percentage gap in the Average Monthly Male-Female wages and Absolute Difference in Gender Employment in Agricultural industries (at 3 digit NIC code)**

NIC Code	Description	Average Wages (in cash) for Men (in Rs./month)	Average Wages (in cash) for Women (in Rs./month)	Percentage Gap Male Female Wages (in Ca
011	Growing of crops; market gardening; horticulture	809.88	523.50	54.70
012	Farming of animals	349.86	109.85	218.49
014	Agricultural and animal husbandry service activities, except veterinary activities.	2489.14	1896.68	31.24
020	Forestry, logging and related service activities	3215.25	1633.71	96.81
050	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	891.07	681.64	30.72
141	Quarrying of stone, sand and clay	2358.43	585.04	303.13

**6.2. Descriptions of quantitative variables within the agricultural sector**

Variable	Obs	Mean	Std. Dev,	Min	Max
wagecash	100611	114.89	239.42	0	15000
wagetotal	100611	123.66	249.43	0	15000
Age	100611	39.98	14.07	18	98

Table 6.3. describes the quantitative variables such as wages in cash and total as well as age in the agricultural sector in our study. Industries with extremely low employment statistics were eliminated leaving us with a sample of industries which are not found to be export oriented industries. Hence, the dummy variable describing export orientation has not been considered for the agricultural sector. Moreover, the percentage share of our sample of agricultural sector in total trade is low.

Average wages in agricultural sector are the lowest amongst all three sectors i.e. approximately Rs. 115 per month and the average age is approximately 40 years, highest being 98 since self employed category has also been taken into account in this study.

Table 6.3. is the correlation matrix describing the correlations of each explanatory variable with wages in the agricultural sector.

### 6.3. Correlations Matrix of variables with wages (in cash and total) in agricultural sector

	Wagecash	Wagetotal
Age	-0.0889	-0.0911
Genedu	-0.0455	-0.0556
rgenedu	-0.0457	-0.0549
dselfemp	-0.4216	-0.4356
dsalaried	0.3369	0.3411
dcasual	0.4589	0.4795
dmstatus	-0.0159	-0.0159
Dhead	0.0598	0.0626
dliterate	-0.0332	-0.0425
dhighedu	0.0104	0.0068
dtechedu	0.0314	0.0298
dgender	-0.0879	-0.09

The direction of relation between age and wagecash or wagekind is negative but they are very weakly correlated. Contrary to expectation, wages are negatively correlated with Genedu, rgenedu, dliterate but here again the correlation is very weak (less than 0.05 in magnitude). The three variables that show a stronger correlation with wages are dselfemp, dsalaried and dcasual. The correlation between wages and dselfemp is close is negative (around -0.4) signifying that the self-employed in agriculture tend to earn lower wages. As expected the correlation between dsalaried and wages is fairly significant and positive, thus the salaried employees tend to earn higher wages. Dcasual and wages are also positively correlated and the magnitude is significant (close to 0.48). There is a weak negative correlation between wages and the dummy for gender (dgender). Dgender = 1 for women, and so the negative correlation could imply that for females wages are lower, on average.

## 7. CONCLUSION

Descriptive statistics of the industries in Agriculture, Manufacturing and Services depicts that Agriculture is the largest source of livelihood in the sample we are considering in our study. Although our sample consists of only 55 industries in agriculture, it employs almost 55% of the total population in our sample. The industries considered under Agricultural sector are Growing of Crops, Market gardening and horticulture; Farming of animals; Agricultural and animal

husbandry service activities, except veterinary activities, forestry, logging and related service activities; Fishing operation of fish hatcheries and fish farms, service activities incidental to fishing; quarrying of stone, clay and sand. It is important to note that we have included Fishing, Forestry, Mining and Quarrying industries under agricultural sector. The data for average monthly wages of males and females in the agricultural sector highlights that men undoubtedly earn more than women and the percentage gap between the average monthly wages is of about 53%.

It can also be concluded that Services sector is the second largest employer in our sample. The status of women in services sector is better as compared to men in this sector. This is evident from the fact that the monthly wages for women are higher on an average than for men by almost 7%. Lastly, manufacturing sector employs only about 8% of the total population considered in our sample yet shows the highest disparity in average monthly wages of men and women.