

ABSTRACT

**ESSAYS ON IMPACT OF SERVICE TRADE ON
LABOUR MARKET IN INDIA**

**DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
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This thesis is a collection of three essays investigating into the impact of growing trade in services on different aspects of the labour market in India. Breakthrough and thereafter diffusion of information and communication technology has led to fragmentation of production blocks and offshoring of it to low-cost destinations, and wide-ranging changes in the mode of business, transactions, and distribution systems, thus making a large array of services tradable across borders. Globally, services output and exports have increased secularly since 1991, and have had immense impact on the labour market world over. In specific, the literature focuses on the impact of this new form of trade in services on labour market outcomes including employment.

The exiting literature suggests that services trade leads to increase in outsourcing and higher demand for skilled along with unskilled workers for both developed as well as developing nations. The link between trade and employment, as observed from the literature, is complex as it works through several channels. The empirical literature on India suggests that tradable modern services, which are skill intensive in nature, have grown faster than traditional services. The literature on services trade and employment, and especially on outsourcing and employment, for the developing countries, including India, is however not large. The impact of changing pattern of services trade is likely, among other aspects, on worker's choice of industry and occupation and on task intensity of jobs.

The stylized facts show that services employment did not register commensurate growth with services production and trade in India. It is however observed that along with services export performance and changes in employment structure towards services, distinct changes in occupational structure within services industry, especially urban services, can be observed in India between 1999-2000 and

2011-12. Such changes in sectoral employment and occupational structure over time along with the emergence of new tradable services are indicative of intergenerational sectoral mobility along with intergenerational occupational mobility towards and within the services sector. The changing pattern of share in urban India is possibly being driven by skill-biased technical progress rather than routine-biased technical progress. Further, the stylized facts are also indicative of changing task intensities of jobs in India's labour market.

As the literature suggest, services trade might generate increased demand for skilled workers, and the younger generation, being more adaptive towards trade-induced changes in labour demand, is capable and aspiring to move out of the father's network or traditional family occupation. There is thus a possibility of intergenerational mobility regarding choice of industry and/or occupation. The thesis intends to explore, with growing services trade, whether the Indian labour market has experienced any change in labour demand towards high-skilled workers, whether growing services trade has induced any change in the choice of industries across generations along with changes in the intergenerational occupations, and whether the employment pattern in the services sector exhibit job polarization with changing task-intensity of services jobs.

This thesis has looked into such labour market outcomes using data from the NSSO 'Employment-Unemployment Surveys' in the 55th Round (1999-2000), the 61st Round (2004-05) and the 68th Round (2011-12) together with TSD_February_2015 data and UN Services trade data on India's services exports for the period 1995-96 to 2011-12. From the employment database, following the literature, a working sample is constructed consisting of urban men in the age group of 16 to 35 years, who are a part of the workforce and are not attending any

educational institution. They have been paired up with their fathers, who have been identified as the male head of the household. The working sample includes only those father-son pairs who report their principal industry as well as their principal occupation. For essay 1, eighteen industry groups are formed by suitably clubbing the 5-digit industry codes provided by NSSO as per the National Industrial Classification (NIC) 1998 for the 55th and 61st rounds and as per the NIC 2008 for the 68th round to study the intergenerational industrial transition. For the second essay, four occupation categories are formed by clubbing the occupation codes provided by NSSO as per the National Classification of Occupations (NCO) 1968 for the 55th and 61st rounds and as per the NCO 2004 for the 68th round to study the intergenerational occupational mobility. The third essay looks into task intensity of jobs in the services sector where jobs are defined as cells of an industry-occupation matrix, the industry groups being same as defined for chapters 2 and 3. However, for the occupation codes, NCO 1968 at 4-digit level are concorded with the 113 occupation codes of NCO 2004 at three digit level, and then the 113 occupation codes are suitably regrouped to form 74 occupation codes for the purpose of the analysis. Using the two datasets mentioned, the thesis explores the changes in Indian labour market with growing services trade in terms of worker's choice of industry, intergenerational occupational mobility, and task intensity of jobs.

Essay 1 explores the impact of growing services trade on the intergenerational choice of industries of the Indian households/workers towards as well as within services industry. The transition matrices depicting the industrial choice of the father-son duo for the three rounds of NSSO survey show high degree of persistence among sons regarding their choice of occupations, i.e., sons prefer to remain in the same industry as that of their fathers. To delineate the factors responsible for such persistent

behaviour a probit model is constructed with the dependent variable 'Persistence' as y_i , which takes a value of 1 if both the father and the son are engaged in the same industry and the value 0 otherwise. As explanatory variables, household characteristics like household type, religion and caste status of the household and the individual characteristics such as age, age squared and the marital status of the son, father's age, education level of both the father and the son, principal activity status and type of occupation of both the father and the son, and the average share of a sector in total services export and CAGR of service exports are considered. The probit estimation shows that father's occupation, status and education above higher secondary level have significant positive impact on persistence. However, higher level of son's education and services export performance of the sector the son is engaged in, reduce the degree of persistence.

Essay 2 investigates into intergenerational occupational mobility with improved services trade performance. In this essay, occupational movements of workers across generations are studied in the context of a structural shift of the Indian economy towards services sector. The analysis is done in two parts. First, a simple measure of mobility is used, which shows that more than 60 per cent of sons prefer to be in their father's occupation, but with a marginal improvement in upward mobility over the years. As the simple measure of mobility fails to capture the finer details of any occupational transition, so the Altham measure of relative mobility is resorted to following Altham & Ferrie (2007) and others, and the full set of log odds ratio are calculated, and identified those making the greatest contribution to the overall mobility between two time points. It is seen that the degree of association between father's and son's occupation gradually increased between 1999-2000 and 2004-05. However, this association declined significantly during 2004-05 to 2011-12, thus

showing improved degree of mobility over these years. Looking into the individual odds ratio contrasts over the period 1999-2000 to 2011-12, it is found that there is a significant decline in the relative advantage of sons of white-collar fathers in getting white collar jobs. This improved the chance of upward mobility for the sons of fathers engaged in occupations other than white collar ones.

In the second part of the analysis, the multinomial logistic regression estimating the Altham measure with covariates shows that improved services export performance has played an important role in inducing son's choice of occupation, upward intergenerational occupational mobility in India during the 2000s in particular. It is found that the sons engaged in moderately trade performing services industries, are less likely to be in services-oriented and clerical jobs compared to other three types of occupation and sons engaged in high services export performing industries are more likely to be in white-collar jobs. Here, it is required to be noted that transport, storage and travel industries experienced moderate share in services exports and computer and related activities and other business services experienced high growth as well as high share in services exports.

Finally, the Multinomial Logistic regression estimates with covariates strengthen the results observed in the first part of the analysis. This indicates that after controlling for covariates, the estimated Altham measure show increased mobility in son's choice of occupation. Also, the impact of almost all the covariates can be summarized to lead to improved chances of sons to enter white-collar and service-oriented or clerical jobs over production related jobs or elementary jobs. This pattern ascertains the proposition of upward mobility among sons regarding their choice of occupation compared to their fathers in a period of improved services exports.

Essay 3 explores whether there are changing task intensities in the services employment pattern leading to job polarisation following improved services trade performance. For the purpose, the job profiles of service workers are studied both from the supply side as well as the demand side by considering the occupational skill distribution measured in terms of median wage earned by the workers, and by the changing task profiles of jobs respectively. It is found that Indian services industry has not experienced job polarisation, rather the share of employment has increased for the jobs only belonging to the upper tail of occupational skill distribution (60th percentile and above). The task-based analysis reveal that the non-routine cognitive task-oriented jobs have gained in share and the share of routine cognitive, routine manual as well as non-routine manual task-oriented jobs declined. The shift-share analysis confirms that this shift in task intensities is primarily explained by change in occupational structure within the industrial sector. The probit estimation results show that improved services export performance plays a significant positive role in shaping the employment pattern of services industry in India during the 2000s.

For all the three aspects of analysis covered in the thesis, the supply side factors like skill content of the workers, measured in terms of their education level, and the demand side factors in terms of skill requirement of the new age jobs that liberalized services trade require, have significant impact in shaping the labour market outcomes in terms of choice of services industries, occupation and task profile of jobs within industries and occupations. Services export performance has proved to have induced the observed changes in labour market outcomes.