

SYNOPSIS

**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 diffusion of information and communication technology have 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 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 indicators including employment. For the developed nations, offshoring of fragmented production blocks to the developing world has relocation effect with a negative impact on employment and a scale effect where offshoring certain activities abroad raises the productivity and efficiency of the firm, thereby raising output and employment. If scale effect outweighs the relocation effect, then offshoring may have a positive impact on employment.

The literature on services trade and employment and especially on outsourcing and employment in the context of the developing countries, emerging market economies including India in particular, is not large. The literature suggests that increased services trade leads to increase in demand for skilled workers and opens up the opportunity of making good use of low-cost services to produce and export production blocks. Trade Liberalisation and technical progress lowers the relative importance of initial condition and increases the chance of mobility of high ability individuals in technologically advanced sectors. Increased services trade through technological advancements in telecommunication services has tended to widen the range of opportunities to the younger generation.

The stylized facts on services sector performance of Indian economy with respect to production, trade, employment and occupation reveal that the Indian economy experienced structural changes towards services output and rising exports of services increasing steadily since 1991, and especially in the 2000s. The empirical literature on India suggests that tradable modern services, which are skill intensive in nature, have grown faster than traditional services. However, services employment did not increase commensurately during the same period with employment elasticity of services remaining low. The other view is that employment has been generated primarily in informal and contract based jobs. With improvements in information and telecommunication technologies and possibility of outsourced services jobs from the developed world, there lies a possibility of changing task intensities of services jobs.

The new types of occupations that have emerged with services trade are likely to require advanced skill set from the workers, more likely to be fulfilled by the young workers equipped with better knowledge and skill set as compared to their previous generation. This is likely to lead to intergenerational occupational mobility of workers. The intergenerational mobility studies for India find increased educational mobility among Indian households in the post liberalisation period but lesser occupational mobility. With economic development, as financial constraint of poor parents get relaxed, there is higher educational mobility and with widened access to knowledge and skill, the scope of moving out of father's network in search of better occupation or industry increases.

As the literature suggests, services trade liberalisation might generate increased demand for skilled workers, and the younger generation, being more adaptive towards trade-induced changes in labour demand, are capable and aspiring to move out of the father's network or traditional family occupation, there is a possibility

of intergenerational mobility regarding choice of industry and/or occupation. The thesis intends to explore whether the Indian labour market has experienced any change in labour demand towards high-skilled workers, and whether increased services trade has induced any change in the choice of industries across generations along with changes in the intergenerational occupational choice, and whether the employment pattern in the services sector exhibit job polarisation with changing task-intensity of services jobs in the post-services trade liberalisation period.

This thesis has looked into the 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. For the employment data, 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. Also, they report their principal industry and principal occupation. 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.

The summary statistics of the working sample reveal that the average age of the sons and their fathers are 23 years and 53 years respectively. Sons are better educated than their fathers and the level of education of the general caste is much higher than that of SC/STs. Eighteen industry groups are formed by suitably clubbing the 5-digit industry codes provided by NSSO as per NIC 1998 for the 55th and 61st rounds and as per NIC 2008 for the 68th round to study the intergenerational industrial mobility. That is dealt with in the first essay. In the second essay, four

occupation categories are formed by clubbing the occupation codes provided by NSSO as per NCO 1968 for the 55th and 61st rounds and as per NCO 2004 for the 68th round to study the intergenerational occupational mobility covered in the second essay. The third essay looks into changing task intensity of jobs in the services sector where jobs are defined as cells in an industry-occupation matrix, which includes 16 services industry groups and 74 occupation groups.

In order to understand export performance of the service industries for the first two essays, and to match it with the employment data, the export data are taken for a five-year span preceding every employment data rounds. The share of the services industries in total services export and the compound annual growth rate of services exports are arrived at for a previous five-year band for each round.

Using the two datasets, namely the NSSO employment unemployment data and the services export data, the thesis explores whether the Indian labour market has experienced any change in labour demand towards high-skilled workers, and whether this has impacted on intergenerational industrial mobility of employment and occupational mobility, and task intensity of jobs leading to job polarisation.

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 quinquennial survey data show high degree of persistence among sons regarding their choice of occupation i.e., sons prefer to remain in the same industry as that of their fathers. To delineate the factors responsible for such 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 finally, the average share of the service sector on total services export and CAGR of service export industries 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 industry sector the son is engaged in, reduce the degree of persistence.

Essay 2 investigates into changes in the intergenerational occupational structure 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 M is used. It is observed that the simple measure of mobility fails to capture the finer details of any occupational transition. 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 distance of association between two tables P and Q . 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. Considering this pattern, it can be concluded that the degree of association between father's and son's occupation differ significantly and the results indicate greater intergenerational occupational mobility. 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 a significant role in inducing son's choice of occupation, in particular upward intergenerational occupational mobility in India during the 2000s. It is found that that sons engaged in moderate service trade performing industries, are less likely to be in services-oriented and clerical jobs as compared to other three types of occupations and sons engaged in high services export performing industries are more likely to be in white-collar jobs. It is noteworthy 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 occupations compared to their fathers in a period of improved services exports.

Essay 3 explores whether the employment pattern in the services sector exhibit changing task intensity of jobs during a period of high growth in services exports. 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 owing to technological breakthroughs respectively. It is found that Indian services industry has not experienced job polarisation, rather the share of employment has increased for jobs 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 sector. The probit estimation results show that improved services export performance plays a significant positive role in shaping up the employment pattern in the services industry in the post-liberalisation period.

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 on the labour market outcomes in terms of employment, occupation and choice of industries. Export performance of the services sector has proved to have significant impact on labour market outcomes as far as the three aspects of analysis are concerned.

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