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Minimum Wages and Poverty in India

by

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Abstract:

A minimum wage policy has often been implemented to get workers out of poverty. However, the policy's impact has been questioned, both theoretically and empirically, whether it fulfils its purpose. The aim of this study is to investigate the effects of minimum wage on poverty in India. After the liberal reforms in 1991 has India been growing steadily, which has been followed by decreasing poverty rates. How minimum wages, stated as the most important labour regulation within the country, has contributed to this development has not yet been examined. By analysing Indian household and individual data, this study estimates the impact of minimum wages on poverty by utilizing a probit method. Particularly, the study distinguishes between sectors, industries and employment differences. Additionally, it uses several poverty lines for capturing how minimum wages are different along the income distribution. The study suggest that minimum wages have had an overall positive impact on poverty in India. A result that is primarily driven by the rural sector.

Keywords: Minimum Wage, Poverty, India, Labour Market, Monopsony

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1   Introduction

Minimum wages have often been implemented to raise the standard of living and take workers out of poverty[1]. Although the policy has the intention to strengthen the most vulnerable in the labour force, there is an impeding risk that the weakest will suffer from distortions in the labour market. Due to minimum wages have been implemented all over the world and in countries with distinct levels of development, the policy takes different forms in which groups it should protect and the number of rates. In low- and medium-income countries, there is often a substantial share of workers who are in poverty, implying that a minimum wage policy can act as an efficient poverty tool. However, difficulties of compliance and coverage do often mean that minimum wages do not receive the effect that it was intended to have.

The effect of a raised or implemented minimum wage on poverty has been and is a hotly debated topic. Theoretically, the impact is dependent on features of the labour market. Based on a neoclassical model, where the labour market is characterized by perfect competition, minimum wages lead to distortionary costs more severe than the benefits received for those workers who are covered. For overall poverty rates, the result is although ambiguous and dependent on the poverty line and elasticity of labour supply. Contrasting result is instead the case if the labour market is characterized by firms with a monopsonic power. Here, an introduction of a minimum wage will increase both employment and wages in the market, thereby improve overall efficiency in the economy. This will, unambiguously, spill over to diminishing poverty. Hence, economic theory describes that a minimum wage policy may impact poverty differently.

Empirically, at the forefront of the new minimum wage debate, are Card & Krueger (1995) and Neumark & Wascher (2002). Both stating that there is a small impact from minimum wages on poverty in the USA. Naturally, more discussion exist in low- and middle-income countries where there is a larger share of working poor (review studies on the impact of minimum wages in developing countries have been conducted by Belman & Wolfson, 2016; Broecke, Forti & Vandeweyer, 2017; Nataraj et al., 2014). Several studies find a strictly positive effect of a minimum wage policy on poverty (Lustig & McLeod, 1996; Scalioni Brito & Lessa Kerstenetzky, 2019) while others highlight that it is beneficial when it target the head of the household (Alaniz, Gindling & Terrell, 2011) or when there is efficient enforcement (Gindling & Terrell, 2010). Numerous studies discover that a minimum wage increase lead to decreased overall poverty, yet losses for the poorest households, implying a complex anti-poverty policy (Arango & Panchón, 2004; Bird & Manning, 2008; Pauw & Leibbrandt, 2012). For India, research regarding minimum wage is a limited and recent occurrence. While the impact of poverty has not been investigated, Soundararajan (2014) discover that minimum wages

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[1] Poverty is in this thesis thought of as a binary outcome, a person is either poor or not. See chapter 4-3 for a discussion regarding poverty.

positively corresponds to increased wages, however, only for occupations that have strong or medium enforcement levels. Moreover, Menon & Rodgers (2017) find that minimum wages in India have an overall modest impact on the labour market. Potentially implying a small effect on poverty as well, yet an effect to be examined empirically.

A minimum wage policy can be implemented for several different reasons where poverty alleviation is only one. Currently, more than 170 countries have a minimum wage legislation (ILO, 2017). Initially were minimum wages introduced for protecting certain vulnerable groups in the labour force. Then, after Second World War it was applied to a larger share of workers (Starr, 1981). Since 1990 has the topic received a burgeoning interest as a policy tool after being condemned as only a distortive policy in the 70's and 80's. Many countries, with very diverse development levels, have been strengthening the minimum wage policy due to its revival (ILO, 2017). The minimum wage legislation in India is called *The Minimum Wage Act, 1948*. The act stipulate that minimum wages should be considered for "Scheduled" employments (occupations) who are not covered by the collective bargaining system. Thus, these workers need another type of regulatory support, which the minimum wage system provides. Further, the legislation states that the appropriate government have the mandate to fix the rate and which occupations to protect. Resulting in that the state level is where minimum wages most often are implemented and revised. As of 2013, this has led to almost 1700 different wage levels and implies one of the most complex minimum wage systems existing (Papola & Kannan, 2017). The political discussion regarding the current minimum wage regime is up to date. A recent governmental report (Government of India, 2019) argues that India should abolish its current minimum wage regime and introduce an uniform system with one, possibly five, rate(s) across the country. The proponents argue that this would increase the coverage and ease the difficulty of compliance. Although, the benefits of a multi-rate system may be several in such a heterogenous country like India. A more complex system provides opportunities to set a wage floor dependent on the state and industry's capacity to pay. However, if the system is not implemented efficiently, the benefits will be overshadowed by the difficulties. Implying that the minimum wage will have a small impact on poverty in India, either negative or positive. Since this has not been empirically addressed in previous research, this thesis will evaluate how India's current minimum wage policy impacts poverty levels.

India's heterogeneity is based on multiple dimensions including sector, religion, state and more. Additionally, this heterogeneity includes the characteristics of employment. The labour force is composed of wage workers, self-employed and unemployed (Papola & Kannan, 2017). The wage workers consider regular and casual wage workers, where only the first is considered as formal workers. Estimates suggest that almost 90 % of all workers (wage, self-employed and unemployed) are informal (Dasgupta & Kar, 2018). Even though the informal workers are in general do not experience any social protection, the minimum wage is still applicable. The minimum wage act does not distinguish between formal or informal workers, the individual is covered if the occupation is a scheduled occupation. This gives the minimum wage legislation a potential huge effect for workers. However, due to the complexity of the minimum wages, reports have discussed that the compliance with the legislation is low (Papola & Kannan, 2017; Soundararajan, 2014).

The purpose of this thesis is to investigate how the minimum wage policy impact the poverty in India. Further, the study will discuss the outcomes based on a theoretical framework and the

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features of the Indian labour market. This study exploits five waves of individual and household survey data from the National Sample Survey Office (NSSO) between the years 1999-2012. The impact is calculated by aggregating the minimum wages, reported annually in the *Report on the Working of the Minimum Wages Act, 1948,* and append to the individual in the NSSO data. The dependent variable is binary and calculated as if the worker lives in a household which per capita consumption is below or above the poverty line. To understand how minimum wages may impact workers dependent on their income, the study utilizes two different poverty lines, the national and $3.2-a-day. By utilizing two lines, this also helps in interpret the labour market characteristics. Further, by investigating subpopulations based on sector, employment and industry, the study attempts to allocate where minimum wages have a strong and weak impact on poverty. By using a probit estimation method and controlling for individual, state, time and industry effects, the study finds that minimum wages, in general, have a positive impact on poverty in India. This is the case for both poverty lines and independent on the employment type. Further, the study finds negative effects on poverty when investigating within industries. This indicates a complex anti-poverty tool where minimum wage act as a wage floor between industries, yet within industries are the losses larger than the gains from the policy. Finally, the sectoral results suggest that the rural sector primary drives the positive result for India.

1.1   Aim, Scope and Research Questions

The aim of this thesis is to address how minimum wages impacts poverty in India. Poverty in India has decreased, however, the contribution of minimum wages to this progress has not been covered. The topic is important for several reasons. Firstly, understanding how the minimum wage policy impacts millions of workers is by nature important. As noted, a recent government report argues that India should implement a new minimum wage legislation. Knowing how the present affects poverty must be considered important before changing the regime. Secondly, this study contributes to a region not extensively covered with research regarding minimum wages. Therefore, it could potentially give policy advice to its neighbouring countries. Thirdly, India could have the most complex minimum wage system in the world, providing an extreme case within the minimum wage debate. Understanding how a multi-wage system, based on state and occupation, may alleviate poverty provides helpful insights to other countries.

Limitations does naturally exist within this thesis. Several studies have noted that compliance is a vital problem within India, this will not be addressed empirically, yet it will be discussed thoroughly. Furthermore, the thesis will not cover how other labour regulations within the country may be interlinked with minimum wages and poverty. Finally, the suggested results may not be easily generalisable to other countries due to India's heterogeneity and complex minimum wage system. However, it may still provide qualified predictions for countries sharing India's characteristics such as large informality, a relatively high minimum to mean wage ratio and low enforcement levels.

A minimum wage policy may affect a person's poverty status in different ways. Some workers gain due to a wage increase, while others may lose if the policy leads to unemployment. The poorest in an economy are often those most vulnerable to labour market shocks. Therefore, a

minimum wage policy may not increase the living standards for those who need it most, implying an adverse effect along the income distribution line with loser and winners. This study attempts to tackle two economy-based poverty thresholds based on household consumption from Indian household data. The research question is therefore stated as follows:

- What is the impact of minimum wage on poverty in India?

Subsequently when answering the above standing research question are these sub-questions be addressed:

- How does minimum wage impact rural and urban poverty?
- How does minimum wage impact poverty when looking at different industry and employment categories?

1.2   Outline of the Thesis

The outline of the thesis will be as follows. First, a review of the existing literature on the minimum wages, poverty and the labour market in India. Second, a presentation of the theoretical framework. Third, a chapter regarding the data sources and methodology for estimating the impact of minimum wages on poverty. Fourth, presentation and discussion of the results. Finally, a conclusion chapter summing up the findings and provide policy suggestion.

2 Previous Research

To understand how minimum wage may impact poverty in India, previous research can act as a guideline. This chapter provide an overview of the empirical evidence existing regarding the effect of minimum wages on poverty. Furthermore, India will be discussed both with a focus on poverty characteristics and how minimum wages affect labour market outcomes.

2.1 Minimum Wage and Poverty

How minimum wages impacts poverty is traditionally studied in high income countries, especially the United States. At the front of the minimum wage debate are Card & Krueger (1995) and Neumark & Wascher (2002). Where Neumark & Wascher (2002) find that raising the minimum wage have an overall small effect on poverty. They propose that it increases both the probability of a poor family is escaping poverty and a non-poor family to fall into poverty. While Card & Krueger (1995, p.307) discovers small decreases in poverty according to an increased minimum wage.

A bourgeoning literature regarding minimum wages in developing countries exist. There is potentially in low- and middle-income countries a narrower connection between minimum wages and poverty since there is a larger share of working poor, i.e. workers who live in poverty. The research is mostly concentrating on the labour market outcomes of wages and employment, while less focus is targeting the direct poverty impacts. Latin America is the region receiving the lion's share of the growing interest. Preliminary work on the impact of minimum wages on poverty in developing countries where undertaken by Lustig & McLeod (1996). By using cross-national data on 22 countries, they find that countries with higher minimum wages are experiencing lower poverty. The fact that minimum wages can be useful in poverty alleviation is also the case in the countries. In Brazil, minimum wages contributes to 35-40 % of the total reduction in poverty, dependent on the poverty measure used (Scalioni Brito & Lessa Kerstenetzky, 2019). When studying Nicaragua; Alaniz, Gindling & Terrell (2011) find an increased probability of moving out of poverty when the minimum wage increases. They note that this is especially the case when the minimum wage targets the head of the household since that person has less of a risk of losing employment. Hence, indicating that there are individual winners and losers from a minimum wage increase.

When investigating the impact of minimum wages on poverty, the effect along the income distribution is receiving a noteworthy interest. Bird & Manning (2008) find for Indonesia that minimum wages is not effective for alleviating poverty, yet it impacts non-poor household more negatively than poor. The policy leads to some workers are out of poverty, yet the majority are facing increased consumer prices. On the other hand, in Colombia, Arango & Panchón (2004)

find that poor workers with relatively higher incomes are gaining from a minimum wage increase while the poorest households are not experiencing the benefits. This result is supported by the finding of Pauw & Leibbrandt (2012) for South Africa, which has a minimum wage system similar to that of India. For South Africa, a minimum wage rise decrease poverty marginally. However, the poorest are often facing the job loses that occurs and there is a negative welfare effect, implying that the policy is a problematic anti-poverty tool. In Mexico, which have a minimum wage system based on a broad coverage and with low levels, the impacts are the opposite where only the poorest are better off (Siga & Cunningham, 2003). However, since the effect is small, these workers do not escape poverty implying that the impact on overall poverty rates are miniscule. The most positive effect on poverty from minimum wages are found in Thailand, which have a minimum wage system based on the provincial level. The impact of minimum wages on poverty is strictly positive and the low-income groups are seeing the largest positive effects (del Carpio, Messina & Sanz-de-Galdeano, 2019).

Compliance and coverage with the minimum wage law is important for the policy to have the intended impact and is stated as an issue in low- and middle-income countries. For Honduras, Gindling & Terrell (2010) find that the minimum wage effect on poverty is dependent on the enforcement level. For large firms where the minimum wage-policy is enforced at a satisfactory level, it is an effective anti-poverty toll. Yet, for the informal sector and small firms where enforcement is low or non-existing, the impact is small. This result can be related to the finding of Saari et al. (2016) in Malaysia. The paper explores the impact of minimum wages on poverty dependent on ethnical groups. For all ethnical groups is poverty reduced, this due to total income increases. The ethnical group most positively affected, experiencing the largest decrease in poverty, is the group with most share of workers in formal employment. However, Canelas (2014) contrast the above standing results. For Ecuador, the paper find that minimum wages have no impact on formal employment and wages. However, it increases informal employment and wages, and decrease poverty. These results show that the type of employment can play large role in how it impacts poverty. However, the literature lacks investigations based on industries which could have different labour market characteristics. In India, where agriculture still employs almost half of all workers, the impact could be different compared to more dynamic industries such as service and manufacturing.

In conclusion, the literature shows that minimum wages have an ambiguous effect on poverty. Even though, most studies display positive impacts on poverty, whether the impacts are positive for the entire population or not, the results are overall mixed. Further, coverage of the minimum wage legislation has received attention. Most studies find that minimum wages have a larger impact for groups receiving coverage and compliance is stated as important. Moreover, the existence of a "lighthouse effect" exists where workers, not covered by the minimum wage, experience an increase in wages and poverty decrease.

2.2   India

Turning to India and the determinants and characteristics of poverty. Datt, Ravallion & Murgai (2016) examines the long-run development of poverty in India. The paper finds declines in

poverty rates since 1970 and acceleration for the post-1991 period when several market reforms were implemented. The diminishing poverty takes place due to several reasons including increasing economic growth and improved pro-poor growth. When dividing between agriculture, manufacturing and service, they find that all industries positively contributes to decreases in poverty. Additionally, enhanced intersectoral linkages is incremental for rural poverty with urban sector consumption decreasing rural poverty. The increasing importance of intersectoral linkages is also examined by Lanjouw et al. (2011). The study describes that the poor urban population lives in relatively small cities in which the linkages to the rural population is the largest. Further, rural poverty is closely connected to a state's net per capita GDP while the urban poverty is more equally spread out across states (Kundu & Mohanan, 2009). Showing that differences exist between the sectors characteristics. Sengupta (2013) studies the rural-urban migrants. The paper finds that agricultural migrants are in general poorer than workers in another occupation. However, if the worker is poor and has the same occupation after migrating, the person will still be poor. Thus, the occupation has more importance than the sector for a worker. The relationship between wages and poverty in rural areas is investigated by Kathuria & Raj (2016), finding a close linkage between the two. This is due to a large informal sector with low productivity levels and no safety nets, which means that wages have a major impact on the living standards. However, the study does not investigate the relationship in the urban sector. They argue in their policy advice that a raised minimum wage could be beneficial for poverty alleviation in India. An argument that is being tested in this study.

Continuing with the evidence existing regarding labour market outcomes from the minimum wage act in India. Soundararajan (2014) investigates the effects of minimum wages on Indian wages based on the enforcement level. For solving the problem of multi-minimum wages in India, the study is only conducted on construction and agricultural workers. The paper finds a positive relationship between minimum wages and actual wage levels, this for high and medium enforcement levels while negative and insignificant for low enforcement levels. Although, the study does not investigate the effect on employment levels, it does highlight the importance of enforcement within the labour market regime. Further, the paper does not capture the full effect based on all occupation. A more extensive analysis of the minimum wage policy on employment and wages are conducted by Menon & Rodgers (2017, 2018). The researchers are investigating the impact of minimum wage on labour market outcomes for different groups in two papers. For child labour (Menon & Rodgers, 2018), they find that increased minimum in urban areas decrease the in-household work. The results from the rural sector contrast this, where the in-household work increases for boys but not girls. An earlier paper (Menon & Rodgers, 2017) discusses the minimum wage impacts on wage and employment levels for males and females divided by rural and urban populations. They find small impacts on labour market outcomes, yet the income increases for rural males without any unemployment effects. This is partly explained by stronger enforcement among male than female workers. Altogether, the study lacks investigations based on industries and the direct impact of poverty yet provides motivation for further research regarding minimum wages in India.

The impact of minimum wages on poverty levels has closest been examined by Belser & Rani (2011). They estimate the *ex-ante* effect of an extending coverage and introduction of perfect enforcement of the national minimum wage to all wage workers in India. This is done for the impact on employment, inequality and poverty rates with the NSSO data from the 2004-2005

survey. Finding that enforcement of a national minimum wage would decrease the probability of being in poverty by 7-10 % for wage earners. In comparison does only education and geographical location provide larger effect on poverty. Thus, the potential gain from an increased minimum wage could be large. However, a projection of extending a policy does not capture how the current minimum wage policy impacts poverty levels. Therefore, one can clearly note that there is a lack in the literature regarding minimum wages and poverty in India.

3 Theoretical Approach

How a minimum wage affects poverty in the economy depends on the foundations of the labour market. Further, as can be noted from the previous research, the impacts on poverty is dependent on the level of minimum wage in correspondence to the poverty line chosen. This chapter presents the theory of how the minimum wages affect poverty, this with two partially contrasting frameworks.

3.1 Competitive Labour Market

Stigler (1946) presents a framework for understanding how minimum wages impact labour market outcomes. In a competitive market, the wage is equal to the marginal product of that worker. This implies that no profits are available for the firm to capture. Introducing a uniform minimum wage larger than the marginal product leads to two contradicting effects. Workers whose marginal productivity does not reach the new wage level will be unemployed. Yet, an offsetting effect exist if workers can increase their productivity level according to new wage, then they will still be employed. However, the first effect is stronger implying that an implementation of a minimum above the competitive wage will lead to a negative employment effect while marginally increased wages.

The neoclassical model can be extended to developing countries where there often exists a covered and uncovered occupation (Belser & Rani, 2015). The dual occupation outcome within the competitive framework is graphically presented in the Figure 3-1 where multiple poverty lines are included. Starting with the labour market outcomes of wages and employment in the dual occupation economy. An implementation of a minimum wage in occupation one implies that the wage will increase while employment decrease. This since the wage must equal the marginal product, therefore some workers become inefficient, and employment decreases. The employment effect is dependent on the elasticity of labour supply which is the slope of the supply curve, indicating how employment responds to wages. When there is relative inelastic labour supply, an increased wage will lead to small employment outcomes. This is often the case with occupational specific training and when the cost of changing job is large. The unemployed workers will move to occupation two for employment, pushing the labour supply curve to the right with increased employment and decreased wages for workers employed. This assumes that occupation two has a minimum wage lower than both equilibrium outcomes and compliance exist in occupation one for the new minimum wage.

By applying two poverty lines, it explains that within this framework, poverty can be affected differently. Starting with poverty line one, before the minimum wage, the workers in both occupations are in poverty. Implementing the minimum wage in occupation one just above the poverty threshold will lower the overall poverty rate. For occupation one workers, these workers will earn above the poverty threshold and have a status of non-poor. On the other hand, occupation two workers do have the same poverty status, yet their actual effect is worsened from the initial situation. This implies that the minimum wage will decrease overall poverty rates when combining the two occupations [2]. When instead introducing poverty line two, no worker is initially poor. The minimum wage is still introduced in occupation one, where the workers will see an increased wage, yet as before, the excess workers who are not competitive in occupation one will increase employment and decrease the wage in occupation two. Now, this implies that the workers are beneath the second poverty line and their status is of being in poverty. Thus, the poverty has increased from zero to the entire labour force in the second occupation.

Figure 3-1 Competitive Labour Market Model with Dual Occupations
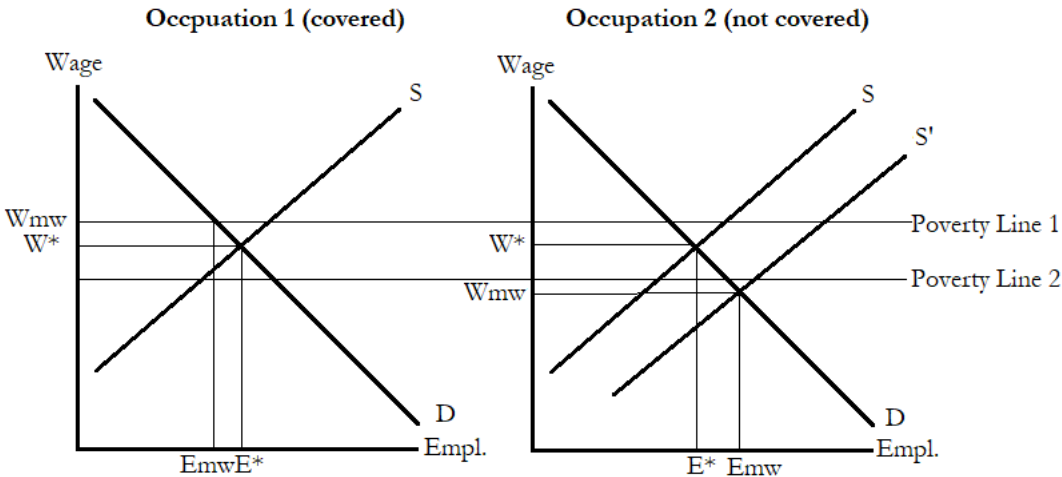
W* - wage in equilibrium, Wmw – wage with minimum wage, E* - employment in equilibrium, Emw – employment with minimum wage, D – labour demand curve, S – labour supply curve, S' – labour supply curve period 2.

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[2] The outcome of the first poverty line introduces a limitation of using poverty as a binary outcome. Since the workers in occupation two are in "deeper" poverty due to being further behind the poverty threshold, it could be argued that the overall poverty rate has increased instead of decreased. This would have been tackled by measurers such as the poverty gap or the squared poverty gap (Deaton, 1997, pp.144–147). Further, see chapter 4-3.

3.2   Monopsonic Labour Market

The above standing result is indicating a labour market with perfect competition and information where workers can easily change between occupations and sectors. Yet, as stated in the beginning, the foundation of a minimum wage-policy is often (as in the case of India) to improve the worker's position relative to the employer. It is by some sense implemented to fix a labour market distortion. Hence, a competitive labour market may not properly describe the condition in which the minimum wage is implement. Therefore, is the monopsonic labour market theory introduced for understanding how a distortive policy may provide a positive impact on a labour market.

Within this framework, the labour market constitutes of monopsonic firms making profits. This is often due to adjustment costs where firms and workers needs to pay a substantial lump-sum when workers change employment (Schmitt, 2000). It implies lock-in effects on the labour market, the monopsonic firms will not pay the marginal product as wage and workers do not have the possibility to switch employment. The monopsonic labour market approach describes that firms will hire workers until the marginal product of labour equals the marginal cost, after that point, the profits for the firm will fall (Manning, 2006).

This can graphically be explained by Figure 3-2. The non-regulatory outcome is at the star points. Introducing a minimum wage increases the wage in the occupation. Additionally, if the minimum wage is not larger than the competitive equilibrium outcome, the employment will also increase since the labour supply positively responds to a wage increase. Thus, the minimum wage implies increasing employment and wages for workers. When introducing a poverty line, the effect on a worker's poverty status can be analysed. Since both wage and employment increased, the poverty will decrease. At poverty line one, which is at the level where the minimum wage is introduced, the minimum wage positively impacts the poverty status for workers since all workers now will be out of poverty. However, if the poverty line is above this point, then nothing will be happening to poverty and the impact on minimum wage on poverty should be estimated to zero. Implementing a minimum wage at or higher than the point where the supply of labour and value of marginal product would imply a return to the discussion of the competitive labour market approach. However, it is assumed that this will not be the case and a minimum wage will always have a positive or no effect on poverty, no matter where the poverty line is set.

The monopsonic model can be extended to a dual occupation type with a covered and uncovered occupation. Contradicting to the competitive labour market, workers not employed in the minimum wage industry will also gain from an increased minimum wage (To, 2008). Since increased wages increases employment, workers will migrate to the covered occupation. This will lead to a shift inwards of the supply curve and increase wages in the in occupation not experiencing minimum wage increase. Whether the second occupation is of competitive or monopsonic type is not relevant since an upward shift of the supply curve in both models indicates an increase of wages. As previously, depending on the poverty threshold will this have an impact on the poverty status for the worker.

Figure 3-2 Monopsonic Labour Market Model
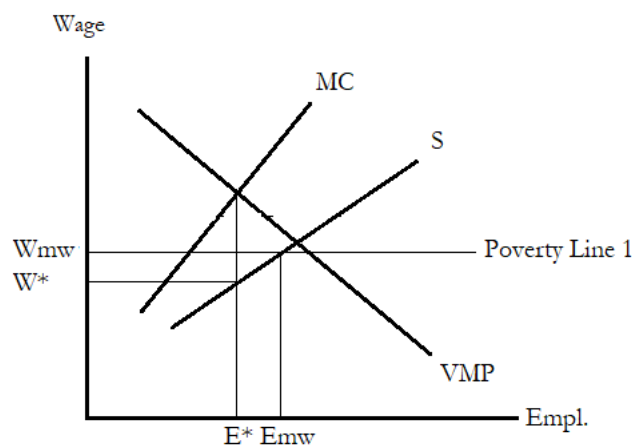
W* - wage in equilibrium, Wmw – wage with minimum wage, E* - employment in equilibrium, Emw – employment with minimum wage, S – labour supply curve, MC – marginal cost, VMP – value of marginal product.

3.3   Summary and Interpretation

Summarizing the theoretical discussion, the overall effect on poverty depends on the characteristics of the labour market. If a majority of firms are competitive then a minimum wage may decrease poverty. However, if firms are seeing market power and there are excessive adjustment costs for workers, then a minimum wage may decrease poverty rates. That differences and examples of both competitive and monopsonic labour markets exists within countries is plausible in a heterogenous country like India. This dual and co-existing market type was found in China. For coastal regions there is a presence of competition while for the hinterland, monopsony is more the case (Ni, Wang & Yao, 2011). Similar effect may potentially be found for poverty in India, however, based on a rural and urban divide.

When estimating the effect om minimum wage on poverty an using two different poverty lines, it is possible to assess the type of labour market characterizing the economy. If the effect of minimum wages on poverty is negative, then the labour market is highly likely to be similar to a competitive labour market. Instead, if minimum wages decrease poverty, when using two different poverty lines, then the labour market can be assumed to be of monopsonic type. More complicated to distinguish between the labour market types is the case when there are no or ambiguous effects of minimum wages. It probably highlights a labour market of competitive type, however, the case of a monopsonic labour market cannot be ruled out either.

4 Methodology and Data

To understand how the minimum wage affects poverty in India, the methodological approach is an econometric procedure estimating the short-term impact. This chapter will present the methodology for estimating this. However, firstly, will the data sources needed be presented. Secondly, a description of the methodology for generating the minimum wage. Thirdly, a discussion regarding poverty. Finally, the model specification and a short econometric discussion.

4.1 Indian Individual and Household data

To be able to conduct an econometric model and thereby estimate the effect of minimum wages on poverty, data is needed. Since the minimum wage may impact poverty differently according to characteristics of a specific sector or industry, survey data is applicable due to the detailed information it provides. The main data source is the Employment and Unemployment Survey (EUS) conducted by the Indian National Sample Survey Office (NSSO). Several studies (Belser & Rani, 2011; Menon & Rodgers, 2017, 2018; Papola & Kannan, 2017; Soundararajan, 2014) have used this for studying and describing the Indian labour market. Included in the surveys are individual and household characteristics such as age, sex, education, sector, caste, education, household consumption and more. The rounds that will be used are 1999-2000, 2004-2005, 2007-2008, 2009-2010 and 2011-2012 and the data is collected from the first of July to the last of June the following year. The reason for choosing the above standing years are since minimum wages are not reported online prior to the first round included and the 2011-2012 round is the latest available. Only individuals between 15-59 years old and in the labour force are included. The labour force includes self-employed, regular and casual wage labour and unemployed. Implying that it excludes people attending educational institutions and doing domestic duties only. State characteristics are included as control variables. These are state poverty rates, which is based on the national poverty line, and the net per capita domestic product of each state in constant rupees. The state characteristics are gathered from the Reserve Bank of India.

Table 4-1 displays summary statistics for the variables used in the empirical examination. The full sample covers 979,735 observations where 795,792 of those have a minimum wage assigned (see next section for explanation). This implies that more than 80 % of the population is assigned a minimum wage. 28 % in the labour force are urban residents while 72 % are living in the rural sector. 30 % of the workers are female in the dataset and the average age is 35. Around 20 % of all workers have a subsidiary job. Further, 32 % are illiterate, 10 % are literate but have no formal education, 13% have primary school education, 16 % middle school, 13 % secondary school and finally 16 % have passed graduate school. 83 % report that they are Hindus while 70 % belong to a disadvantaged group or caste. In the sample are 43 % the head

of the household. The average per capita GDP at state level, calculated with 2004-2005 constant prices, is 28214 rupees and the average poverty rate at the state is 29.28 %. This all is calculated with the five NSSO surveys covering the years 1999-2012.

Table 4-1 Summary Statistics

	Mean	Std. Dev.	Min	Max	Number of Observations
Minimum Wage	90.32	40.21	25	228.62	795,792
Sector (1 equals urban)	.28	.45	0	1	979,735
Sex (1 equals female)	.30	.46	0	1	979,735
Age	34.72	11.19	15	59	979,735
In Subsidary Activity	.20	.40	0	1	979,735
Illiterate	.32		0	1	979,735
Less than primary	.10	.30	0	1	979,735
Primary School	.13	.34	0	1	979,735
Middle School	.16	.36	0	1	979,735
Secondary School	.13	.34	0	1	979,735
Graduate School	.16	.37	0	1	979,735
Hindu	.83	.37	0	1	979,735
In Disadvantaged Group	.70	.46	0	1	979,735
Head of hhld	.43	.50	0	1	979,735
Gdp (State)	28213.98	15586.89	182	129397	973,341
Poverty ratio of (State)	29.28	12.04	.4	57.2	950,463

Note: Weighted with NSSO sample weights.

4.2   Minimum Wage Data

Problems occur when trying to assign the minimum wage to any individual since the minimum wage or schedule is not reported in the NSSO-data. The minimum wage rates are reported yearly by the Ministry of Labour and Employment in the *Report on the Working of the Minimum Wage Act 1948*. The rates are due to the 31st of December of that year and in nominal rupees per day for a worker. The reports used in this thesis are 1998 (for the survey year 1999-2000), 2003 (2004-2005), 2006 (2007-2008), 2008 (2009-2010) and 2010 (2011-2012) [3]. Similarly, there exist no code in the report or NSSO-data that makes it possible to accurately connect the minimum wage. This implies that the minimum wage must be aggregated and assigned manually to workers in the dataset.

By following the procedure of Menon & Rodgers (2017:2018), this study construct aggregated industry categories in each state for being able to map a minimum wage to a worker. The categories created are; agriculture, fishing & forestry; mining; manufacture; construction and

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[3] For the states that the minimum wage has not reported https://paycheck.in/ has worked as complementary source. For some states and years, no minimum wage has been found, this results in that not all workers have a minimum wage, as reported in the summary statistics table 4-1.

service [4]. The minimum wage rate for each category is created by taking the median of all minimum wages belonging to the specific industry, this is based on the National Industry Classification (NIC) 2008 (older data uses the NIC 2004 and 1998). If no appropriate alternative has been found, the schedule has been left out, the same where piece rate has been reported. For consistency, dearness allowance is included. When several different minimum wages exist under one schedule (for different areas and skill-categories) the median of those is used. After constructing the aggregated industry categories, each worker is assigned the minimum wage for the state and industry. Further, since some are unemployed and therefore do not report any occupation, their minimum wage is the median minimum wage at state level. Exclude these cases would imply that minimum wage in the economy does not affect these worker's poverty. It is important to include the entire labour force in the analysis. Concludingly, workers are assumed to receive the minimum wage in the primary category. Soundararajan (2014) describes that among low wage workers, it is common to have a secondary job. Yet, this paper limits itself to only focuses on the primary category where the major income should be received.

While this methodology of assigning minimum wage to a worker can be regarded as limited since the worker will not always see the correct wage. It is essential for investigating how minimum wages impacts the labour market and poverty rates. Additionally, agriculture and construction are together two of the most common in the dataset and does often come in only one rate in the state. This implies that these industry groups can serve as references for the methodology to check robustness as if they drive the results. Continuing, as previously described, the Indian minimum legislation does not apply to all workers, yet every worker is assigned a minimum wage. While for accuracy reason this is a problem, for analytical reasons it is not since the minimum wage impacts the labour markets with a covered and uncovered occupation. Thereby, making the theoretical framework applicable.

Table 4-2 describes the proportions of the labour force employed in the different industry categories per survey year and in total. It can be noted that agriculture is the most popular industry with almost 48 % employees in total. Second largest occupation is within the service sector, where 28 % does have their primary jobs. Manufacturing and construction employ around 10 % separately while mining and fishing & forestry are only employing little bit more than 1 % together. Additionally, construction has seen a raise in employment during the time-period and there is a small decrease in unemployment.

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[4] The reasons for creating those six industries are that minimum wages in mining is set on the national level. For fishing & forestry, they would otherwise be paired with agriculture, since agriculture often come in one rate, it is easy to find the correct wage for those workers and impact a large share of workers. Manufacturing and Services does often come in wide different types of schedules and it is difficult to pair the correct occupation in the minimum wage reports to the correct job category in the NSSO data.

Table 4-2 Industry Category per Survey Year.

	Year					Total
	1999-2000	*2004-2005*	*2007-2008*	*2009-2010*	*2011-2012*	
Agriculture	44.26	52.22	51.31	48.01	43.43	47.74
Mining	0.66	0.64	0.58	0.70	0.61	0.64
Manufacturing	14.46	11.73	11.58	11.18	12.48	12.34
Construction	5.62	6.46	7.33	10.21	11.44	8.18
Service	30.85	25.05	25.78	26.77	28.67	27.51
Fishing & Forestry	0.51	0.60	0.52	0.50	0.48	0.52
Unemployed	3.64	3.30	2.90	2.63	2.90	3.08

Note: The numbers are in percentage, summing to 100 per year. Weighted to national level with NSSO sample weights.

Table 4-3 describes the development of the median minimum wage per industry category and year. It can be noted that for all levels that the minimum wage rate has almost tripled between 1998 and 2010. The relation between the categories is also the same, although mining had the second lowest rate in 1998 while in 2010 it has the largest.

Table 4-3 Average Minimum Wage Rates. Due to 31st of January for the Year.

	Year				
	1998	*2003*	*2006*	*2008*	*2010*
Agriculture	44	71	80	101	129
Mining	47	63	74	92	175
Manufacturing	50	75	88	110	141
Construction	53	81	92	116	149
Services	52	78	90	109	144
Fishing & Forestry	49	77	87	107	144
Median	51	76	89	110	141

Note: The rates are in nominal rupees a day.

4.3 Poverty Lines

As has been described in the previous literature and in theory, how a minimum wage impacts poverty is dependent on the poverty line chosen. According to one definition of poverty, poor people are those "…who lack command over basic consumption needs, including food and non-food components." (Haughton & Khandker, 2009, p.43). This generates a binary outcome, a person is either poor or not, and can be calculated by using a definite poverty line. Naturally, a poverty line is to some degree arbitrary since the basic consumption needs is different for people. Discussion regarding how to measure poverty exist. An economic threshold can be questioned for not incorporating a complete measurer of poverty. This has been tackled recently by multidimensional poverty indicators (see for example Alkire & Jahan, 2018) where dimensions of health, education and standards of living are included. Further, by using a poverty line and a binary outcome of being in poverty or not, it does not consider that people may be closer or further behind the poverty line. The poverty gap or Sen-Shorrocks-Thon index (among other measurers) captures the distance from the poverty line and inequality within the poverty (Haughton & Khandker, 2009). Altogether, a minimum wage policy is concerning economic

income. Other aspects of poverty will, to the best, only be targeted to the tiniest part by a minimum wage. Further, the methodological benefits of an economic threshold and whether a person is poor or not is advantageous within the scope of this paper.

India stipulates its own consumption-based poverty line. The poverty line is based on a specific intake of calories from different food items and purchases of other goods and services. Since the needs and prices are different between rural and urban areas, two different lines exist for the sectors. The national poverty line has been revised at the methodology level at four different times, 1979, 1993, 2009 and 2014 (Government of India, 2014). This study will use the Tendulakar (Government of India, 2009) methodology for the years 2004 to 2012 and the Lakdawala for 1999-2000 (Government of India, 1993). The reason for introducing two different methodologies is since the Tendulakar does not report any rates for the first survey year of 1999-2000 [5].

To understand the world's poverty and raise global awareness, an international poverty line has been introduced. The first international poverty line was suggested by Ravallion, Datt & Van De Walle (1991) and implemented in the World Bank (1990) report about poverty. The initial line was based on studying national poverty lines for the poorest nations and was set at $1-a-day for consumption and a given PPP adjustment. The line has since been updated to $1.9 using the 2011 PPP levels (Ferreira et al., 2015). For addressing several poverty dimensions, a poverty line, set at $3.2-a-day (in 2011 PPP) has been introduced (World Bank, 2018, p. 67-69). This line reflects the lower middle-income status and the basic needs for a country in that category.

Finishing the discussion with which line to include in the econometric analysis. By utilizing two poverty lines, it is possible to, in a crude manor, investigates if only some workers gain. Additionally, the two poverty lines helps in understanding the labour market characteristics as described in the theoretical chapter. The $1.9-a-day is in monetary terms close to the national poverty line and the national should be used when studying a specific country, implying the international line becomes redundant. As India gradually becomes a low-middle income country, the poverty line needs to be reconsidered to reflect people's needs and vulnerability whereby the $3.2-a-day line becomes useful. As noted with the national poverty line can the rural – urban dimension be substantial when it comes to needs and prices in India. This calls for also adjusting the international poverty lines in rural and urban areas by using ICP estimate. This thesis will therefore focus on the national and international $3.2-a-day in the analysis for studying the impact of minimum wages on poverty.

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[5] The difference between the two lines can be found in the estimations for 2004-2005 where both methodologies have a poverty line. For the rural sector, the Lakdawala calculates the poverty line to be 356.3 rupees a month while the Tendulakar 447. The difference is not as substantial for urban poverty lines, yet still 538.6 for Lakdawala and 570 for Tendulakar. This indicates that poverty rates will be different between years. However, the aim of this thesis is not to calculate accurate poverty rates for India and the impact on the relationship between minimum wages and poverty is assumed to be small.

The methodology for estimating whether a person is considered poor is determined whether he/she belong to a household that is below the poverty threshold. This is based on the per capita consumption rate (household consumption divided with the number of members in the household) and is how the Government of India defines poverty (Government of India, 2014). This implies that workers may earn more than the poverty rate, yet the worker may still be living in a household where the average consumption is beneath the poverty line. It is important to note that limitations exist when linking an individual worker to a poverty status based on a household level. Heintz & Vanek (2007) describes that intra-household dynamics is important in decision making situations. This influence the distribution of resources and type of consumption within the household. Thus, household members can be in a relatively better or worse situations. Yet, by following the definition provided of poverty by the government of India, this will be disregarded but should be kept in mind.

Table 4-4 displays the poverty headcount ratio for each poverty line and year. For the survey year 2007-2008 have no national poverty line nor $3.2-a-day line in rupees been found, therefore has the 2004-2005 threshold been used. It can be noted that the trend of people in poverty is decreasing for both poverty lines. In sum, national poverty line, calculates that 29 % of the workers live in a household which per capita consumption is below the poverty threshold. For the $3.2-a-day line, 68 % lives in poverty. Both poverty lines are based on per capita consumption in nominal rupees. Since both consumption and poverty lines are in nominal values, no problems occur due to inflation. In addition, all values are recalculated to daily rates. Remember, the national poverty line for 1999-2000 follows the Lakdawala methodology, which is probably the reason for the poverty being so low in that year. As stated, 2007-2008 do not have an updated poverty line. Which answers why there are sharp declines and then increases in poverty for the year. These two explanations describe the relatively large fluctuations in poverty over the time-period. Year dummies are included in all regression for generating unbiased estimators when using inconsistent poverty thresholds. For further interest in the poverty rates in nominal rupees, see appendix A for the yearly poverty lines.

Table 4-4 Percentage of Workers in Poverty dependent on the Poverty Line

		Year					Total
		1999-2000	*2004-2005*	*2007-2008*	*2009-2010*	*2011-2012*	
National Poverty Line	In Poverty	30.72	38.68	20.09	32.17	24.55	29.22
	Not in Poverty	69.28	61.32	79.91	67.83	75.45	70.78
$3.2-a-day	In Poverty	73.04	75.16	60.65	69.27	59.79	67.64
	Not in Poverty	26.96	24.84	39.35	30.73	40.21	32.36

Note: The numbers are in percentage, summing to 100 per poverty line and year. Weighted to national level with NSSO sample weights. For the survey year 2007-2008, the 2004-2005 poverty line is used since no other is reported from my sources. The national poverty line for 1999-2000 is based on the Lakdawala methodology, the other years follow the Tendulakar.

4.4   Econometric Specification

This thesis is interested if minimum wages increase or decrease poverty in India. The problem can be stated with a micro approach, does a worker who has a higher minimum wage in his sector have a greater or lesser probability of being poor? This poverty outcome is binary, a person is either poor or not and can be modelled. Ordinary Least Square (OLS) regression and linear models will both be biased and inefficient when dealing with a binary dependent variable (Park, 2009). Instead, econometric literature (Hosmer, Lemeshow & Sturdivant, 2013, p.7) suggest the usage of logistic regression models for estimating a binary outcome.

In line with previous literature (Alaniz, Gindling & Terrell, 2011; Soundararajan, 2014) is the probit model used in this thesis. The probit model is a logistic regression model and estimates the probability of a binary outcome, this with a standard normal distribution function (Hosmer, Lemeshow & Sturdivant, 2013, pp.434–435). The estimated coefficient is dependent on the error variance of the model estimated, which is based on the variables included (Karlson, Holm & Breen, 2012). Thus, if a new variable is included, it will affect the coefficients for the other variables since it will reduce the total variance. This is regardless of the correlation between the variables in the regression. Further, Karlson, Holm & Breen (2012) describes that the estimated coefficient from the probit model measures the one unit increase corresponding to an impact on z, which is linked to a probability of a successful outcome. Since the probit model is non-linear, an increase in z is related to different increases in probability. Concludingly, the interpretation of the coefficient from a probit model is not as straightforward as a linear regression. However, the sign is consistent, indicating that a positive coefficient does always have a positive impact on the probability of a successful impact. Therefore, this study will not directly discuss the magnitude, instead will the signs be the focus of attention in how it impacts poverty.

The model is specified as follows:

$$Y_i = \alpha + \beta_1 MW_{j,s,t} + \beta_2 X_{i,t} + \beta_3 State_{s,t} + \beta_4 S_s + \beta_5 T_t + \beta_5 (T_t * S_s) + \beta_6 I_j + \epsilon$$

Equation 1

Where *i* denotes an individual, *t* denotes time, *s* denotes state and *j* denotes industry category. The dependent variable *Y* takes value one if the worker lives in a household which per capita consumption is <u>above</u> the poverty threshold and zero if it is <u>below</u>. *MW* is the specific minimum wage level at the industry category, state level and time. *X* is an individual specific vector with control variables including: age, gender, educational level**,** in a disadvantage group, if the person is a Hindu**,** rural or urban residence, if the worker is employed in any subsidiary activity and the head of the household. If the worker is the head of household is included since a previous study (Alaniz, Gindling & Terrell, 2011) found that if the minimum wage is targeted to the head, then the probability of moving out of poverty is increased. If the worker has a job in a subsistence sector, he/she may potentially not capture the full effect of the minimum wage. The rest variables are considered as standard when measuring poverty and employment outcomes in India.

State incorporates state specific control variables which are the overall poverty rate (based on the national poverty line) for the state and GDP per capita. *S* is a state dummy capturing state unobserved state heterogeneity and *T* is a year dummy capturing overall macro effects of the years. By introducing the state and time specific effects together, the model does also capture state level shocks that could have an effect on how minimum wage impacts the poverty level, this in line with previous literature (Card & Krueger, 1995; Menon & Rodgers, 2017). The *I* stand for industry category and is a dummy for each category, controlling for unobserved effects that workers working in each category potentially may have. Lastly, ϵ is assumed to be a random error term.

Following Abadie et al. (2017), the error term should be clustered based on the sample technique used, this for generating general estimation for the entire population and not only the study group. Thus, it generates external validity to the entire Indian population. This does also create unbiased standard errors not correlated with the regressors. Hence, solving a potential problem of heteroscedasticity. The NSSO is firstly stratified on the first stage units which are the census villages in the rural sector and the urban frame survey blocks in the urban sector, combining these two leads to the ultimate stage units (USU). The USU are the stratified households in both sectors and will therefore be the unit of clustering, this together with the specific year. Weights are provided by the NSSO and used for each survey year. By investigate the difference between with and without the sampling weights, one can tell whether the proposed model is correctly specified and whether the estimations are driven by a subpopulation in the sample (Lohr, 2010, p.450). When estimating the models with and without the sampling weights, similar results were obtained. Together, the clustered standard errors and the weights should provide reliable estimates of the Indian population incorporating the sample design of the different surveys. Altogether, this model is used for capturing the short-term effect of an increase in minimum wage on poverty.

5 Results

The empirical results show how minimum wages impacts a worker's poverty in India. Firstly, models with the full sample are estimated, both with the national poverty line and the $3.2-a-day line. In addition, models based on sectors are presented. Thirdly, estimates based on the four largest industrial categories and employments are shown. Fourthly, a discussion regarding the results.

5.1 India and Sectors

The first regression results can be seen in table 5-1 with the full and sectoral samples. As described in the econometric subchapter, comparing different estimates in the probit model can be misleading. Therefore, the analysis will focus on the signs of the coefficients. The dependent variable poverty is coded as one if the worker lives in a household which per capita consumption is <u>above</u> the poverty line (not in poverty) and zero if it is <u>below</u> (in poverty). Consequently, a positive coefficient implies that the variable has a positive effect on the probability of not being in poverty.

The first two estimates for all India use the full sample to regress the effect of the different variables on the two poverty lines. The national poverty line exploits 760,028 observation while the $3.2-a-day line, which is above the national poverty line, utilize 762,995 observations. The minimum wage has a positive and significant impact on both the national and the $3.2-a-day poverty line, this with a similar magnitude. People who work in an industry that receives an increased minimum wage have a higher probability of not being poor. Implying that minimum wages are working as an effective anti-poverty tool in India. Continuing with other determinants of poverty. Female workers are less likely to be poor as well as older people. Employees who have a subsidiary employment see an increased risk of living in a poor household. Education increases the probability of not being in poverty, as well as being a Hindu and not be a part of disadvantaged group. If the worker is the head of the household, the probability of the person living in a household in poverty is less. The only difference between the poverty lines lies in the sector the worker lives in, where one is urban and zero is rural. For the national poverty line, rural has a positive effect on the poverty status while for the $3.2-a-day line, urban residents are better off. Lastly, a larger GDP at state level increases the likelihood of not being poor. The poverty variable does negatively impact a person's poverty status implying that workers who live in state with a higher percentage of poor people are also more likely to be poor. Summing up, based on the full sample, the minimum wage has a positive impact on the probability of the worker living in a household which is not in poverty, this unconditional on the poverty line used.

Table 5-1 Probit Estimates for the Full and Sectoral Samples

	All India		Rural		Urban	
	National	*$3.2*	*National*	*$3.2*	*National*	*$3.2*
Minimum Wage	0.003***	0.002***	0.001***	0.003***	0.001	0.001
	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)
Sex (1 equal female)	0.142***	0.185***	0.143***	0.192***	0.095***	0.138***
	(0.012)	(0.011)	(0.014)	(0.013)	(0.022)	(0.023)
Age	0.009***	0.011***	0.009***	0.012***	0.007***	0.009***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
In Subsidary Activity	-0.130***	-0.117***	-0.128***	-0.122***	-0.143***	-0.157***
	(0.015)	(0.014)	(0.016)	(0.015)	(0.048)	(0.043)
Educational (reference group: illiterate)						
Below Primary	0.179***	0.133***	0.171***	0.135***	0.250***	0.235***
	(0.018)	(0.018)	(0.021)	(0.020)	(0.032)	(0.040)
Primary	0.270***	0.221***	0.263***	0.232***	0.333***	0.290***
	(0.016)	(0.016)	(0.019)	(0.018)	(0.031)	(0.037)
Middle	0.403***	0.383***	0.392***	0.398***	0.468***	0.456***
	(0.015)	(0.015)	(0.018)	(0.017)	(0.028)	(0.033)
Secondary	0.613***	0.607***	0.549***	0.567***	0.796***	0.802***
	(0.018)	(0.017)	(0.021)	(0.019)	(0.033)	(0.034)
Graduate	0.966***	1.069***	0.770***	0.948***	1.313***	1.398***
	(0.018)	(0.016)	(0.022)	(0.018)	(0.028)	(0.035)
Hindu	0.161***	0.139***	0.133***	0.092***	0.237***	0.219***
	(0.022)	(0.018)	(0.027)	(0.024)	(0.037)	(0.027)
In disadvantaged group	-0.356***	-0.398***	-0.345***	-0.382***	-0.353***	-0.419***
	(0.019)	(0.016)	(0.022)	(0.019)	(0.037)	(0.030)
Head of hhld	0.222***	0.272***	0.193***	0.220***	0.287***	0.390***
	(0.011)	(0.011)	(0.013)	(0.012)	(0.019)	(0.019)
Sector (1 equals Urban)	-0.168***	0.158***				
	(0.025)	(0.019)				
Gdp (State)	0.000**	0.000*	0.000	0.000	0.000	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Poverty (State level)	-0.280***	-0.036	-0.229***	0.125	-0.133	0.447***
	(0.050)	(0.028)	(0.063)	(0.166)	(0.275)	(0.163)
Constant	2.163***	-0.448***	2.276***	-1.444	0.524	-3.871***
	(0.213)	(0.164)	(0.284)	(0.924)	(1.508)	(0.876)
Time Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
State-Year dummies	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	NO[a]	YES	YES
Obs.	760028	762995	510007	512931	249572	250056

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

Note: Standard errors, in parentheses, are clustered by year and ultimate stage units provided by NSSO. Weighted to national level with NSSO sample weights.

[a] I tried to do it including all dummies, however it was not possible for this regression, yet the result where similar when I excluded each set of dummies separately.

Continuing with sectoral estimates shows how minimum wages impacts poverty in larger detail. For the rural sector, both estimates exploit more than 500,000 observations while the urban make use of around 250,000 observations. In the rural sector, minimum wages have a positive impact on a worker's poverty status, this for both poverty lines. For the urban population it is positive, yet insignificant at the 10 % level, this for both the national and the

$3.2-a-day line. Implying that minimum wages seems to be an effective anti-poverty tool only in rural areas. The results do point towards that the all India results was driven by the rural population. It is also noteworthy that the impact is not dependent on the chosen poverty line. The other variables are showing similar results as the full sample. Females have a larger probability of not being in poverty. Older workers are also less likely of being in poverty while workers who have a subsidiary activity are in larger extent poor. The longer education, the more likely of not being poor. Hindus are less poor than other religious groups combined and if a worker belongs to a disadvantaged group, he or she is more likely to be in poverty. If the worker is a head of the household, the worker is less likely to live in a poor household. Net GDP per capita at state level does still positively contribute to a worker's poverty status. Lastly, poverty is the only variable different between the estimations. For rural sector, the share of population living in poverty positively affects the poverty status for a worker, yet insignificant. For urban and the national poverty line, the sign is negative and insignificant while for the $3.2-a-day, it is positive and significant. In conclusion, based on the sectoral estimates, the results show that minimum wages only significantly impact poverty in the rural sector.

5.2   Employment and Industry

For improving the understanding of how the minimum wage impacts poverty, this subchapter includes estimates based on different subpopulation of the sample. Regional differences, caste and religion could have been included for discussing and capturing some of the heterogeneity across the country. However, how minimum wages affects poverty due to employment and industry is prioritized.

Table 5-2 displays probit estimates based on the employment characteristics; self-employed, casual workers and regular workers. Self-employed are individuals working within a household firm. This group does not receive a wage since they are working within their own household, the wage labour and firm profits cannot be separated. Thus, they are not directly covered by a minimum wage, yet it still impacts the group since they are working in a nearby uncovered occupation. Included within the self-employed workers are: own-account, employers in household enterprises and unpaid helpers in household enterprises. Casual workers are workers with temporary jobs and contracts. Regular workers are workers that have a permanent job contract. Regular worker is the only category which is formal according to this categorization, yet some of the regular workers are informal as described in the introduction. It has been reported that the informality of the workforce in India is reported to be 90 %, yet the minimum wage legislation covers informal worker as well. The probit estimates shows a positive and significant effect for all income groups at both poverty lines. The same control variables are included in this regression and the full models are found in appendix B. This indicates that the minimum wages are impacting workers similarly over employment type. However, the results suggest that the impacts minimum wages can take different channels. This since regular workers, to a relatively larger degree, are working in a

covered sector while self-employed workers do not receive a wage, yet still experience similar impacts.

Table 5-2 Employment Type Probit Estimates

	Self – employed		Casual Workers		Regular Workers	
	National	*$3.2*	*National*	*$3.2*	*National*	*$3.2*
Minimum Wage	0.002***	0.002***	0.002***	0.001**	0.003***	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Time dummies	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES
Time-Year dummies	YES	YES	YES	YES	NO[a]	NO[a]
Industry dummies	YES	YES	YES	YES	YES	YES
Observations	383709	386000	189627	189868	157267	157267

*** p<0.01, ** p<0.05, * p<0.1
Note: The same control variables as previously described are used, see appendix for full models. Standard errors, in parentheses, are clustered by year and ultimate stage units provided by NSSO. Weighted to national level with NSSO sample weights. Full regression can be seen in appendix B.
[a] I tried to do it including all dummies, however it was not possible for this regression, yet the result where similar when I excluded each set of dummies separately.

Table 5-3 presents the effect of minimum wages on poverty based on industry. As described in table 4-2 are agriculture, construction, service and manufacturing the most common industries in the dataset covering almost 96 % of the labour force. When running the probit regression with the same control variables as previously described, the minimum wage variable now generates a negative impact of minimum wages on poverty. For all industries, at the national poverty line, an increased minimum wage increases poverty. In other words, increasing the minimum wage leads to a larger probability of being in poverty. The effect seems to be stronger in manufacturing, however, it is important to be cautious with the size of the coefficients. For the upper poverty line at $3.2-a-day, the results are less robust, while all categories show negative coefficients, only for agriculture is this statistically significant. In conclusion, in industries, the results suggest that increasing the minimum wage also increase poverty, this effect is stronger at the national level.

Table 5-3 Industry Based Probit Estimates

	Agriculture		Construction		Service		Manufacturing	
	National	*$3.2*	*National*	*$3.2*	*National*	*$3.2*	*National*	*$3.2*
Minimum Wage	-0.007**	-0.008*	-0.005**	-0.002	-0.007**	-0.002	-0.014***	-0.001
	(0.004)	(0.005)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)
Time Dummies	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES	YES	YES
State-Year dummies	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	325147	327692	62427	62716	247988	248886	83002	83277

*** p<0.01, ** p<0.05, * p<0.1
Note: The same control variables as previously described are used, see appendix for full models. Standard errors, in parentheses, are clustered by year and ultimate stage units provided by NSSO. Weighted to national level with NSSO sample weights. Full regressions can be seen in appendix C.

5.3 Discussion

With the help of the previously stated results can the research questions regarding minimum wage and poverty be answered. Overall, there is no uniform effect in how minimum wages impacts poverty in India, yet the general impact is positive. A short summary of how minimum wages affect poverty in India: The policy has a positive impact on poverty in the full sample for both poverty lines. When looking at sectoral estimation, increasing the minimum wage has a positive and significant effect in rural areas while only positive in urban areas, this for both lines. For the employments; self-employed, casual and regular wage workers, it can be noted that the result is uniform across the categories and poverty lines with a positive and significant impact. Finally, estimations based on the industry, increasing the minimum wage has a significant and negative effect on a worker's poverty status for all categories when utilizing the national poverty threshold. For the $3.2-a-day poverty line, all industry categories are negative, yet only for agriculture is this significant.

The first results, with the full sample, suggest that if a worker is experiencing an increased minimum wage, the probability of that worker is not in poverty increases, *ceteris paribus*. The result is consistent for both poverty lines. Linking this to the theoretical framework, it suggests a labour market characterized by monopsony since the effect is positive for both poverty lines. The reason for a monopsonic market between industries is since the mobility between industries often are small or non-existing in developing countries. Menon & Rodgers (2018) describes that in low-income countries are often the main education the on-the-job training. Thus, the adjustment cost gets very large. This generates lock-in effect between industries and put monopolistic pressure on the labour force. Thus, the minimum wage increases both wages and employment, an effect that leads to reduced poverty. Therefore, the minimum wage helps the labour market to get closer to the equilibrium outcome. Hence, workers are closer to receiving the marginal product.

The positive effect of minimum wages on poverty for all types of employment strengthens the assumption of a monopsonic labour market between industries. Rani et al. (2013) describes that between 60 % to 70 % of all workers are covered by a minimum wage during the study period that this thesis covers. While, the methodological approach taken in this study is of assigning all a minimum wage, all workers do not *de facto* have a minimum wage since their employment is not in a scheduled occupation. Based on the informality, one could assume that the more formal labour markets for regular workers have another coverage of minimum wages than for casual. Evidence also describes that compliance of the minimum wage is superior for regular workers for at least the first survey years (Government of India, 2007). Further, the self-employed are not wage workers implying that those are not experience an impact in minimum wage from being covered. Although, they are still in an industry which experience a pressure from a minimum wage. The monopolistic model describes that in the covered occupation, there is an increased wage and increased employment which decrease poverty for the covered sector workers within the targeted occupation. Workers are then moving from the uncovered sector due to a wage gap. The

movement of workers shifts the labour supply curve to the left, thereby increasing the wage also in the uncovered sector. Implying that also uncovered workers gain from a minimum wage increase and poverty decreases for both occupations. Thus, since all employment types, from regular workers probably seeing largest coverage to self-employed where all workers are uncovered, the Indian labour market between industries are characterized by monopsony.

If the labour market is characterized by monopsony, the effect does not depend on the poverty line used. Thus, the effect of a minimum wage will be positive for all types of workers along the income distribution. This is the experience of Thailand where there was a strict positive effect of minimum wages (del Carpio, Messina & Sanz-de-Galdeano, 2019). Also, the uncovered workers will benefit from the policy, which was the case in Ecuador (Canelas, 2014). It partly contradicts with evidence from Colombia (Arango & Panchón, 2004) and South Africa (Pauw & Leibbrandt, 2012) where only the middle- and high-income groups gains. However, this study only investigates two different poverty lines and a more refined investigation along the income distribution may provide other empirical results.

The negative coefficients for all industry categories suggest that in the industry, the market is characterized by competition. Because workers can switch between covered and uncovered occupations since similar forms of skills are required, it creates more competition for labour among firms. The adjustment cost is then smaller than between industries and drives the wage closer to the marginal product of that worker. The implementation of a minimum wage in such a setting will most likely exceed the market's equilibrium and bring unemployment. The employment losses, in turn shifts the labour supply out in the uncovered sector and lower the wages beneath the poverty threshold. Hence, the minimum wage within sectors leads to increased poverty. These results, combined with the full sample for entire India, suggest that the minimum wage serves as a wage floor at the industry level and increases the relative position of that industry compared to other. However, within industries are people rather seeing increased poverty and the losses are more severe than the gains.

Continuing with a discussion regarding the sectoral estimates suggest that the results for India is primarily driven by the rural sector. The urban labour market, where there is no or a very small effect, seems to be characterized by the neoclassical model. Thus, potentially are there a larger presence of competition in urban areas than rural. The adjustment cost can be lower due to more nearly located workplaces which generates a more competitive labour market. The small impact could also be due to that the minimum wage is closer to the marginal product of the worker. Thus, the rate is set according to the industry's ability to pay. If the minimum wage increase is small, then the impact on poverty will be limited. The elasticity of labour supply is also important in understanding the poverty impact from a minimum wage increase. If the labour supply is inelastic, then there are small unemployment effects from a raised minimum wage. Hence, the unemployed that migrates to an uncovered occupation does not put enough pressure to lower the wage in the uncovered sector so it falls beneath the poverty line. The estimates report positive and significant results for the rural sector indicating the previously described monopsonic labour market. These sectoral results are in line with Menon & Rodgers (2018). They find that minimum wages have a positive impact on wages and employment (the outcomes of monopsonic model), only for rural males, for all

other groups (urban and female), there were no impacts. Men are in this gender combined estimates the largest share of rural workers, potentially driving the results.

The wage trend between the sectors may capture the pressure on the local labour market. Kundu & Mohanan (2009) describes that the rural sector wages did increase in real terms while decreased for urban workers, this between the years 1999-2000 and 2004-2005. While this is not stated as the trend for the entire period, it could indicate a difference between the two sectors. If applying a competitive approach for both sectors, it implies that a minimum wage would have a more distortive effect in urban than rural areas if minimum wages where constantly increasing. Since real wages fall, there is probably a larger unemployment effect due to a raised minimum wage. For the rural sector, the minimum wage may instead be absorbed by the real wage increases. On the other hand, the causality may be the opposite, with minimum wages generating the increase in real wages for rural sector while did not impact the wage level in the urban sector. Thereby causing the decreased poverty in rural only.

The relationship between rural and urban sector poverty and minimum wages does also correspond to which type of work being done within each sector. Naturally does agriculture provide most of the employment opportunities in the rural sector while only a fraction for urban households. It can be noted that agriculture is the only industry experience a significant impact on the $3.2-a-day line. Features regarding methodology and the foundation of the minimum wage argues for a stronger impact of minimum wages in agriculture, compliance issue speaks against it. The methodological approach within this thesis does, to a larger extent, assign the correct minimum wage to the agricultural labourer. Therefore, the likelihood for experiencing the correct wage rate should be larger in the agricultural industry. The same argument can be used for construction workers. However, estimations states that 80-90 % of all agricultural workers are covered while only 16-30 % for construction workers (Rani et al., 2013). These two points suggest that minimum wages can impact the agricultural estimates more [6]. On the other hand, the non-compliance is larger in agriculture than any other industry (Rani et al., 2013). Indicating that minimum wages in the agricultural sector would have a lesser impact on the poverty status than for the other industries since the legislation is not as well-enforced. Altogether, since the estimates advocates for a stronger impact in agriculture, the first two points seems to be more important than the last. The stronger impact in agriculture can be related to the larger effect of minimum wages in rural areas, yet it is difficult to assess if agriculture drives the rural results or the opposite. However, all industries have a significant impact on the national poverty line, so the difference should not be exaggerated.

A reason for why the rural sector is experiencing this impact could be due to the implementation of the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA, earlier NREGA). The policy was implemented in 2005 and enables all rural households 100 days of work within a year with wages at the statuary minimum wage level.

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[6] As described in chapter 4.2, the industry-based regressions also serve as a robustness test for checking if the methodology of generalizing service and manufacturing wages. Since service and manufacturing do not differ significantly to the other measurers, the method can be assumed to be robust.

The policy has empowered low-wage workers and thus created spaces for bargaining and labour rights (Rani & Belser, 2012). Rani et al. (2013), states that it has led to raised awareness of minimum wage and therefore increased compliance. Therefore, the policy could be a reason why the minimum wage has a larger effect in rural areas. However, estimates before and after the implementation of MGNREGA do not support the fact that the policy has been decisive for the rural impact. This indicates that the policy's contribution, probably still non-neglectable, does not fully explain the difference in impact of minimum wages between sectors.

Lastly, the dissimilarities between rural and urban poverty could possibly explain why minimum wages is a productive anti-poverty tool in the rural sector while ambiguous in the urban. Kathuria & Raj S.N. (2016) finds that there is a strong link between wages and poverty in rural areas, although the connection for urban is not established. This is also in line with the results of this study and could suggest that other incomes than wages are important in the urban poverty. Kundu & Mohanan (2009) describes that low rural poverty rates are found in states with high GDP, yet this is not the case for urban poverty. Highlighting that urban and rural poverty alleviation is dissimilar. Evidence does also show that rural poverty has decreased faster than urban (Datt, Ravallion & Murgai, 2016). The evidence show that urban poverty is harder to impact than rural, something that minimum wage have a problem with too.

Finishing with a short discussion about compliance. That minimum wage has a positive impact when there is compliance and coverage has been the case in several countries (Gindling & Terrell, 2010; Saari et al., 2016), including India (Soundararajan, 2014). Yet, the result from employment where compliance is different but the impact on poverty is similar suggest that this is not the case for India. Although, it must be mentioned that this is not tested empirically. The probit estimates could suffer from omitted variable bias which is compliance. Cacciamali et al. (2015) describes that poorer states have a larger share of casual laborer not earning the minimum wage while richer states have a smaller. Since richer states in general have larger minimum wages, there could be a systematic connection between minimum wage and poverty thru compliance. Thus, compliance with the law is what is driving the results rather than the actual wage level, this for the employment categories.

6   Conclusion

This thesis has tried to answer how minimum wages impacts poverty in India. Subsequently has dimensions regarding sector, employment and industry been addressed and discussed. A generalization of the minimum wage was necessary for estimating the impact on poverty, therefore has industry categories been created to connect the different wage rates to the specific worker. For further understandings on the impacts on minimum wages have two different poverty lines been utilized. The study has found that in general that minimum wages have a positive impact on a person's poverty status, this regardless of the poverty line used. The second major finding, in line with previous literature, is that the effect of minimum wages is driven by the positive effect in the rural sector. In urban areas does minimum wages not have a significant effect on poverty. Further, it can be noted that the type of employment does not disturb the positive effect of minimum wage. Self-employed, casual and regular workers do all experience a similar effect of minimum wages on poverty. Lastly, when looking within industries, the study finds that it does negatively affect poverty. This indicates that minimum wage acts a wage floor for industries which decreases poverty when there is a minimum wage increase, yet within industries are the losses larger than the gains.

This study was based on the aims and objectives stated in the introduction. First was the aim of answering how minimum wage contributes to poverty reduction and whether a new minimum wage regime should be implemented with a focus on a uniform wage rate. The results of this study imply that minimum wage is a complex policy tool. Implementing a uniform minimum wage would probably distort the within industry effects even more. Potentially making the losses within sectors larger than the benefits between. In response, this study suggest that the scheduled employment is a functioning system and that the policy have positively contributed to a reduction of poverty. Yet, as suggested previously by Belser & Rani (2011), increase coverage and decrease the number of scheduled occupations could probably be beneficial for the current system. Second was an aim of contributing to a region not extensively targeted. The findings are in line with the estimations from Malaysia and Thailand with a positive impact on poverty, while Indonesia are seeing a negative impact of their minimum wage policy. Thirdly, the results support the current minimum wage act since it provides beneficial results. It therefore shows that a complex system with multiple wages based on occupation and state level can be valuable for a country sharing India's characteristics.

An issue that was not tackled econometrically in this study was the impact of compliance, yet it has been discussed thoroughly. An additional uncontrolled factor which has not been addressed is the relationship between minimum wages and consumer prices. The study has not investigated whether increased minimum wages lead to increased prices for consumer goods in states who have higher minimum wages. If this is the case, the results will be biased towards a greater positive impact of minimum wages on poverty. Additionally, a different poverty measurer like the poverty gap could increase the understanding of how minimum

wage affects poverty. The poverty line has its advantages in being easy to measure and understand, yet it has clear limitations. Lastly, the generalisability of these results is subjected to certain limitations due to the uniqueness of India's minimum wage system and the internal heterogeneity existing in the country.

The causality of the impact may be questionable when using a non-experimental method. Altogether, a household's poverty status is determined on consumption which in turn is based on the income which the household can possible spend. By assuming that wages are contributing to the lion share of that possible consumption, this study suggest that minimum wages are partially contributing to the poverty status and not the opposite.

The limitations of this study can act as stepping stones for future research regarding minimum wages in India. Other points of departures could to capture other types of the heterogeneity within India with a focus on religion, caste, regions or more refined impacts along the income distribution curve. The channels which minimum wages act would also be an interesting aspect regarding a minimum wage policy. Clearly, more research is needed to fully understand the role of minimum wages in India and low- and middle-income countries in general.

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Appendix A

Per capita Poverty Lines in Nominal Rupees a day.

	National Poverty Line		$3.2-a-day line	
	Rural	*Urban*	*Rural*	*Urban*
1999-2000	10.9[a]	15.1[a]	19.6[b]	24.1[b]
2004-2005	14.9	19.3	23.8	30.1
2009-2010	22.4	28.7	36.8	44.7
2011-2012	27.2	33.3	43.3	53.1

[a] The national poverty line is using the Lakdawala methodology.
[b] Linearly interpolated between the years 1993-2004/2005

Appendix B

Probit Estimates based on Employment

	Self – employed		Casual Workers		Regular Workers	
	National	*$3.2*	*National*	*$3.2*	*National*	*$3.2*
Minimum Wage	0.002***	0.002***	0.002***	0.001**	0.003***	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sex (1 equals female)	0.180***	0.208***	0.115***	0.151***	0.050*	0.108***
	(0.018)	(0.016)	(0.019)	(0.022)	(0.030)	(0.024)
Age	0.008***	0.011***	0.005***	0.004***	0.008***	0.010***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
In Subsidary Activity	-0.140***	-0.090***	-0.047**	-0.085***	-0.055	-0.065*
	(0.021)	(0.018)	(0.022)	(0.025)	(0.046)	(0.038)
Education (reference group: illiterate)						
Below Primary	0.198***	0.120***	0.113***	0.078**	0.268***	0.259***
	(0.027)	(0.024)	(0.027)	(0.032)	(0.046)	(0.050)
Primary	0.273***	0.202***	0.202***	0.145***	0.270***	0.277***
	(0.023)	(0.021)	(0.024)	(0.028)	(0.041)	(0.043)
Middle	0.422***	0.415***	0.265***	0.202***	0.373***	0.362***
	(0.021)	(0.020)	(0.023)	(0.026)	(0.040)	(0.036)
Secondary	0.629***	0.598***	0.340***	0.227***	0.613***	0.667***
	(0.024)	(0.023)	(0.029)	(0.031)	(0.044)	(0.038)
Graduate	0.868***	0.943***	0.429***	0.453***	1.112***	1.222***
	(0.025)	(0.021)	(0.039)	(0.040)	(0.038)	(0.035)
Hindu	0.129***	0.092***	0.125***	0.141***	0.171***	0.152***
	(0.027)	(0.023)	(0.032)	(0.032)	(0.039)	(0.029)
In Disadvantaged Group	-0.337***	-0.371***	-0.254***	-0.304***	-0.303***	-0.356***
	(0.024)	(0.020)	(0.033)	(0.032)	(0.031)	(0.025)
Head of hhld	0.228***	0.234***	0.249***	0.300***	0.226***	0.357***
	(0.016)	(0.015)	(0.018)	(0.022)	(0.029)	(0.022)
Sector (1 equals Urban)	-0.206***	0.122***	-0.385***	-0.095***	-0.010	0.226***
	(0.031)	(0.024)	(0.039)	(0.032)	(0.035)	(0.026
Gdp (State)	0.000***	0.000**	0.000***	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Poverty (State level)	0.685**	0.358*	0.109*	0.129	-0.010*	-0.008**
	(0.320)	(0.199)	(0.061)	(0.082)	(0.005)	(0.004)
Constant	-2.595	-2.844**	-0.868	-7.752**	0.791***	-0.738***
	(1.652)	(1.119)	(0.852)	(3.672)	(0.132)	(0.119)
Time Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
State-Year dummies	YES	YES	YES	YES	NO	NO
Industry dummies	YES	YES	YES	YES	YES	YES
Obs.	383709	386000	189627	189868	157267	157267

*** p<0.01, ** p<0.05, * p<0.1
Note: Standard errors, in parentheses, are clustered by year and ultimate stage units provided by NSSO. Weighted to national level with NSSO sample weights.

Appendix C

Probit Estimates based on Industry

	Agriculture		Construction		Service		Manufacturing	
	National	*$3.2*	*National*	*$3.2*	*National*	*$3.2*	*National*	*$3.2*
Minimum Wage	-0.007**	-0.008*	-0.005**	-0.002	-0.007**	-0.002	-0.014***	-0.001
	(0.004)	(0.005)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)
Sex (1 equals female)	0.143***	0.193***	0.188***	0.152***	0.131***	0.176***	0.063*	0.078**
	(0.016)	(0.016)	(0.042)	(0.039)	(0.025)	(0.020)	(0.036)	(0.038)
Age	0.010***	0.013***	0.003**	0.005***	0.008***	0.011***	0.004***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
In Subsidary Activity	-0.097***	-0.122***	-0.187***	-0.151***	-0.091***	-0.025	-0.240***	-0.216***
	(0.019)	(0.018)	(0.033)	(0.036)	(0.030)	(0.027)	(0.046)	(0.045)
Education (reference group: illiterate)								
Below Primary	0.188***	0.149***	0.104**	0.145***	0.233***	0.240***	0.220***	0.097*
	(0.025)	(0.025)	(0.044)	(0.050)	(0.035)	(0.035)	(0.048)	(0.057)
Primary	0.254***	0.211***	0.277***	0.255***	0.368***	0.324***	0.238***	0.193***
	(0.021)	(0.021)	(0.039)	(0.045)	(0.031)	(0.029)	(0.044)	(0.049)
Middle	0.393***	0.388***	0.339***	0.340***	0.485***	0.495***	0.396***	0.380***
	(0.020)	(0.021)	(0.037)	(0.040)	(0.029)	(0.028)	(0.040)	(0.043)
Secondary	0.565***	0.533***	0.510***	0.526***	0.778***	0.783***	0.551***	0.614***
	(0.024)	(0.021)	(0.043)	(0.042)	(0.034)	(0.030)	(0.046)	(0.049)
Graduate	0.707***	0.781***	0.910***	1.027***	1.242***	1.354***	0.992***	1.055***
	(0.028)	(0.024)	(0.052)	(0.053)	(0.030)	(0.027)	(0.051)	(0.049)
Hindu	0.157***	0.105***	0.121***	0.140***	0.164***	0.166***	0.175***	0.173***
	(0.033)	(0.030)	(0.042)	(0.037)	(0.029)	(0.024)	(0.044)	(0.039)
In Disadvantaged Group	-0.376***	-0.399***	-0.286***	-0.375***	-0.326***	-0.387***	-0.311***	-0.378***
	(0.026)	(0.023)	(0.044)	(0.036)	(0.026)	(0.023)	(0.047)	(0.040)
Head of hhld	0.186***	0.190***	0.403***	0.440***	0.219***	0.290***	0.271***	0.395***
	(0.016)	(0.015)	(0.032)	(0.036)	(0.021)	(0.019)	(0.030)	(0.029)
Sector (1 equals Urban)	-0.363***	-0.060	-0.217***	0.080**	-0.138***	0.170***	-0.220***	0.141***
	(0.059)	(0.048)	(0.038)	(0.035)	(0.028)	(0.021)	(0.048)	(0.036)
Gdp (State)	0.000	0.000***	0.000	0.000***	0.000*	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Poverty (State level)	-0.152**	-0.186***	-0.121***	-0.081***	-0.074***	-0.115***	-0.125***	-0.119***
	(0.061)	(0.034)	(0.039)	(0.018)	(0.026)	(0.028)	(0.037)	(0.027)
Constant	2.037***	-0.002	2.205***	-0.301	1.698***	-0.087	2.630***	0.041
	(0.378)	(0.188)	(0.303)	(0.293)	(0.223)	(0.207)	(0.564)	(0.323)
Time Dummies	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES	YES	YES
State-Year dummies	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	325147	327692	62427	62716	247988	248886	83002	83277

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

Note: Standard errors, in parentheses, are clustered by year and ultimate stage units provided by NSSO. Weighted national level with NSS sample weights.