

Impact of Transportation Barriers and Stigmas on the Labor Force Participation of Women in urban cities in India

Kushali Kumar

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Background

Being the second most populous country in the world, India houses approximately 605 million females within its borders (World Bank1, 2022). However, only 20.3% of women had a job or were actively looking for one (were part of the labor force) in 2019 as compared to men who had a labor force participation rate of 73.3% (ibid) (Global Economy, 2020). Moreover, women only contributed 17% to India's GDP, which is less than half of the global average of 37% (World Bank2, 2022). Since the 1990's, the Female Labor Force Participation (FLFP) was steady around 30%, as seen in the graph. However, this number has been decreasing significantly over time since 2005, where FLFP decreased from 31.9% to 18.6% in 2020 (World Bank, 2022).

Almost 20 million women had dropped out of the workforce between 2005 and 2012 (Dixon, 2018). This decrease in FLFP is concerning, especially considering the FLFP of other countries which have similar characteristic to India

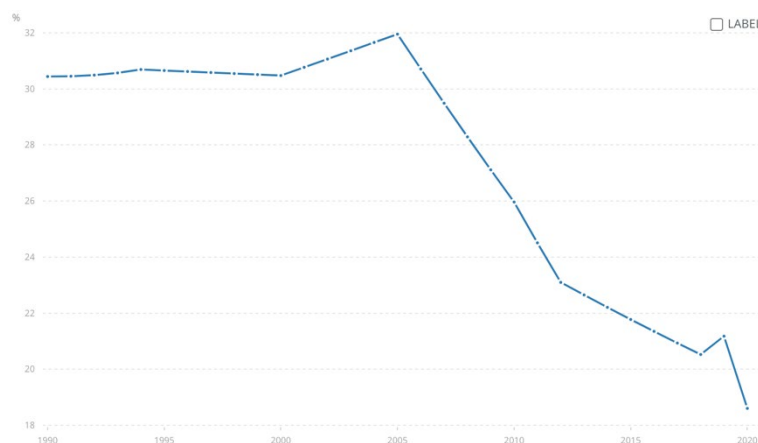


Figure 1: India's female labor force participation since 1990

like Bangladesh, Indonesia, Pakistan, is much higher than that of India. As women tend to invest more in their earnings in children and communities, it is crucial to find the reason for the drop in labor force participation of women and suggest policies to reverse the effect of the same (Dixon, 2018).

The decrease in FLFP is taking place at the same time as the increase in education of women. The enrolment of women in secondary education has increased by more than double from 36.6% in 1993 to 75.2% in 2020 (World bank, 2022). The enrolment of women was higher than men on all levels—primary, secondary, bachelor, and graduate—which is puzzling as the labor force participation of men is more than 3 times as that of women. Additionally, in the last 5 years, there has been an increase in the female enrolment in higher education by 18% (ibid). In general, education is associated with improvement of skills and increasing of

employability. However, this increase in education is not being translated to the increase in labor force participation of women in India. This indicates that although 75.2% women were enrolled in secondary education, yet only 20.3% of women were employed or actively looking for a job as of 2020.

Over the last few years there has also been an increase in cases of assault and rape. The 2012 Nirbhaya (Hollingsworth, 2020) and Yadav case (India Today, 2022) where women traveling were gang raped and murdered are few of the instances that brought to light the many cases that were happening all over the country. This increase in crime against women in general by 19% in 2019 as compared to 2015 might discourage the women to travel. In this paper, I investigate the possible causes of the declining FLFP; and if there exist transportation barriers and stigmas for woman to work. I first review the existing literature on the topic to understand research done and explanations provided by scholars to explain this drop in labor force participation of woman. I then explain the economic model of labor market and then use it to come up with two hypotheses of the declining FLFP: familial interference and unsafe environment. Using ethnographic insights, I understand whether my explanations are valid, and then suggest some policies to increase FLFP.

Literature review:

Over the last three decades, the economy of India had grown rapidly alongside increasing education and declining education gender gap, however, the labor force participation of women has seen a steady decline (Chatterjee, 2021). This could be due to various reasons including an increase in husbands' income and change in sector composition of the economy and a variety of other developments. In recent years, there have been many scholarly articles written that have offered – and tested – range of hypotheses to explain the stagnation and decline in the labor force participation of women in India. Most of the studies focused on four explanations for the decline: firstly, rising household incomes, which pulled women out of agricultural labor; secondly, lack of transportation infrastructure; thirdly, decreasing demand of labor; and fourthly, the patriarchal value system in the country.

The first explanation provided by the literature is the rising income of the household, which says that an increase in the income of the woman's spouse/husband would lead those in poor household out of the labor market (Verick, 2018). The evidence provided in these papers suggest that this stands true for the families in the rural areas where the predominant sector is

agriculture. However, in urban cities agriculture is not a big part of the job market (only 6% of total jobs), which means that this explanation is not applicable in the urban cities (ibid). As there exists a drop in FLFP both in rural and urban area, this only provides a partial explanation to the problem.

The second explanation tackles the lack of transportation infrastructure and how it may impact the FLFP. They hypothesise that as transportation is essential to get to work, the lack of it would discourage the workers from joining the labor force. Lei et al. (2019) explores the impact of transportation infrastructure in the rural areas of India on women's employment and find that an increase in frequent road transportation service increases non-agricultural employment among woman more than for men. They explain how the expectation to perform certain household task lies more on women as compared to men (Lei et al. 2019). This means as there exists limited time for women to fulfil their familial non-work responsibilities, addition of transportation infrastructure makes transportation faster giving them more time to work. This does not change the employment for men by much as compared to women, as they were traveling to work regardless of the infrastructure. Additionally, they find that this increase is stronger for societies that have egalitarian gender norms, holding societies values responsible for the magnitude of effect on female labor force participation (ibid). This increase in FLFP is specific for non-agricultural sector, hence, there is a shift in workforce from agriculture to non-agriculture and not an increase in total FLFP. However, as there exists infrastructure for transportation in urban cities, this hypothesis fails to explain the declining FLFP in the urban cities in India.

The third explanation considers the demand side of labor market and tries to explain how there does not exist enough demand for female workers due to the nature of the market. Kalsen and Pieters (2015) look at the demand sides of the labor market to try and identify reasons for this stagnation. They argue that changes in sectoral structures of economic activity, and hence labor demand and employment, can account for the decline in female labor force participation (Kalsen and Pieters, 2015). They assert that there exist strong societal stigmas undermining opportunities for women to work in low skilled sectors, while there has been a reduction in the stigmas¹ related to white collar jobs like manufacturing (ibid). However, most

¹ The stigma with women working in low skill high labor job stems from the belief that women should not provide manual labor. Additionally, women with low education appear to be boxed in by the necessity to work if household incomes are very low or insecure, and stigmas attached to working in low-skilled jobs if they are somewhat more educated and in more secure economic environments (Kalsen and Pieters, 2015). White collar

of the economic growth in India over the past few decades has occurred in construction and other low skill sectors that are not female dominated and where society believe women should not work leading to a decline in the demand for female workers in those areas of the economy (World Bank, 2020) (ibid). Hence, they believe that this can explain the decrease in FLFP. This, although gives an explanation, the decreasing demand does not provide the entire picture of the current situation, and this must work with other factors to cause the decline.

The fourth type of hypothesis considered the patriarchal value system in India. Chakraborty et al. (2018) defines the patriarchal mindset as a mindset that sees female body as pure and as a property of some male (like her husband) and that males can then use force to ‘use’ women for their benefit. In a patriarchal society, the men would view women’s existence to serve men, whereas women taking the jobs of men would go against their wants. They did a nation-wide analysis which focuses on the patriarchal value system as the main factor behind the lower labor force participation of women (Chakraborty et al, 2018). They believe that patriarchal values increase the perceived threat of crime against women, by supporting the men in case of a sexual assault and victim shaming (ibid). They provide evidence to support their theoretical hypothesis empirically by showing that the decrease in FLFP is prevalent in more conservative (mostly rural) societies (ibid). Although helpful to consider, patriarchal value system is extremely broad to present specific policy recommendations which makes it difficult to take any specific steps towards solving the puzzle of declining FLFP.

Earlier research has explored female labor force participation and hypothesised reasons for its stagnation. However, these studies were limited in their scope and solutions. The first two hypothesis—of increasing households’ income and lack of transportation infrastructure—were limited to rural areas and did not explain the decline in FLFP in the Urban areas. In rural areas, it is the lack of existence of transportation infrastructure that acts as the main barrier which is not the case in urban cities which have roads and public transport. Additionally, the third and fourth explanations—of the demand side factors and patriarchal value system—are incomplete as alone they would not be able to explain the decline. As there is no extensive research done about impact of transportation barriers and stigmas in urban (metropolitan) cities in India which might impact the FLFP, I will consider that in this paper. Conclusions drawn from the previous papers would be extremely useful in understanding the society and

job stigma is against women working outside of the home, especially in factory work, and the difficulty of combining household production with market work in nonagricultural occupations (ibid).

characteristics of supply and demand of labor which would give us a foundation to understand the effects in urban setting.

Methodology:

To analyze the female labor force participation, we must first understand the Labor Market as this model helps us understand the relationship between labor supply and demand of labor while considering the different aspects that affect either. Then we will consider the different transportation barriers and stigmas that exist for women in India and theorize how that might impact the FLFP to come up with a hypothesis. We will then conduct ethnographic interviews that will give us insight to the social context to confirm our hypothesis. Then we will use the data available to draw explanations and conclusions.

Labor Demand:

Labor demand represents the number of employees the firms are willing and able to hire at a given wage rate (Mankiw, 2017). As a firm does not want to make losses, it will only hire an additional worker if the additional revenue the firm generates covers the additional cost for hiring the worker (including wages). As the firm hires more workers, holding constant other inputs, each worker contributes less additional output, also known as the law of diminishing returns. Hence, firms are willing to pay them less (Blundell and MaCurdy, 1999). This leads to the downward sloping labor demand curve – hiring an additional worker generate less additional output than the previous worker produced so the wage rate paid decreases (refer Figure 2), *ceteris paribus* – holding constant other factors that influence worker productivity and, hence, the demand for labor. If there exist factors that influence the productivity of the workers or the price of the output of firms will shifts the labor demand curve inward or outward.

There are multiple factors that might cause the labor demand to shift, like improvement in education or training of workers, improved technology, increase in demand for the output, etc. Over the years, different studies have documented how factors have impacted the female labor demand, which we can use to understand changes in the demand for female labor. Ince (2010), using data from Turkey finds that an increase in the education of women leads to an outward shift of the labor demand curve. Considering the perspective of employers, this is because firms ideally want productive workers, and gaining additional education makes workers more desirable. This leads to the employers being more willing to pay highly educated workers additional wages per hour, hence shifting the labor demand curve outward (from D1 to D2, as shown in the graph). This however is highly simplified as we limit the analysis to one ceteris paribus violation regarding labor demand at a time – although there may be many taking place simultaneously. For instance, the existence of gender discrimination in hiring due to various social mechanisms might lead to a decrease in demand for female workers, shifting the demand curve inwards. In this situation, if the discrimination effect is higher, then the positive impact of increase in education is overcome by the negative impact of gender discrimination in hiring. Hence, while considering our analysis in the paper, we will be mindful of the complexity and intersectionality in factors impacting the female labor participation.

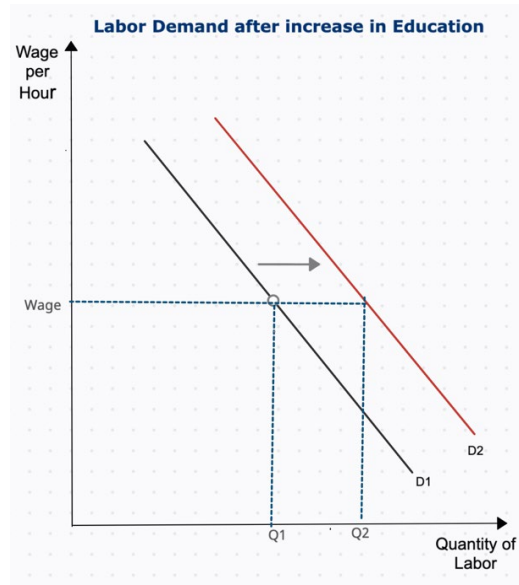


Figure 3 Labor demand after an increase in Education

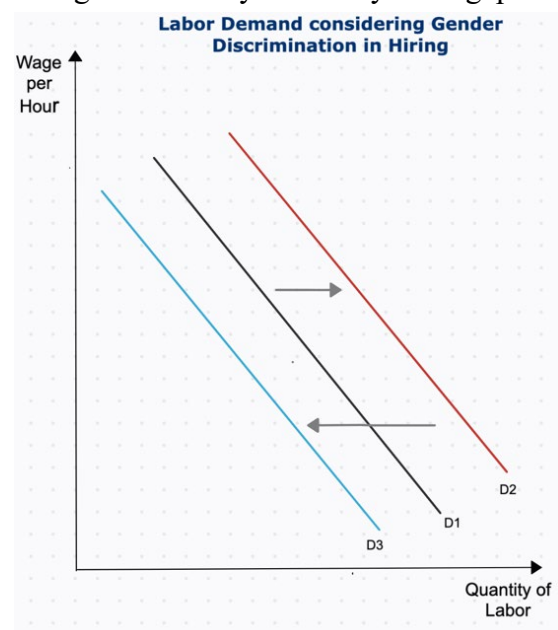


Figure 2 Labor Demand Considering Discrimination

Labor Supply:

Labor supply represents the number of hours employees are willing and able to supply at a given wage rate (Mankiw, 2017). As time is limited, a person's decision to work is affected by their choice between work and leisure which includes household work or responsibilities in this framework, making the two substitutes. An increase in wage rate leads to a reduction in demand for leisure as its opportunity cost increases, which causes more people to be willing to work more hours (Blundell and MaCurdy, 1999). This phenomenon leads to an increase in the quantity of labor supplied with an increase in wage

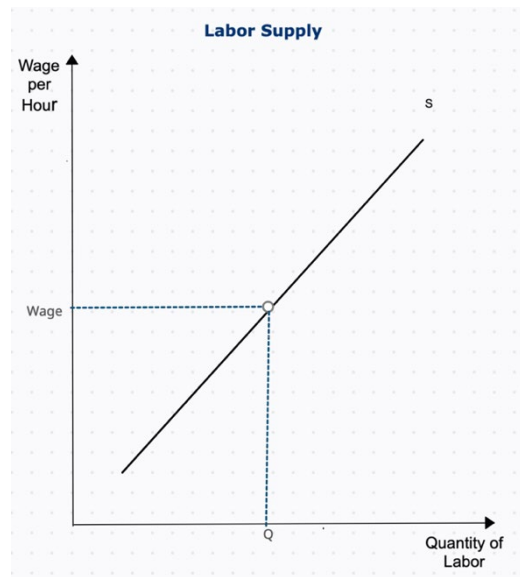


Figure 4 Labor Supply

rate, *ceteris paribus* (ie., holding constant other factors aside from the wage rate that might influence the quantity of labor supplied) making the supply curve of labor upward sloping (refer Figure 2). If there exist factors other than wages that influence the decision of individuals to work (*ceteris paribus* violations), it shifts the labor supply curve inward or outward.

There are multiple factors that might cause the labor supply to shift, including changes in the number of workers, required education, worker's preferences, etc. Over the years, different studies have identified how non-wage factors have impacted the female labor supply. For instance, Bloom and Canning (2007) investigate how fertility can affect the labor supply of the women in the workforce (Bloom et al, 2007). They explain that due to the nature of time being limited, women in most societies have to divide time between working, leisure, childcare, and non-market household work (ibid). Assuming the relationship between number

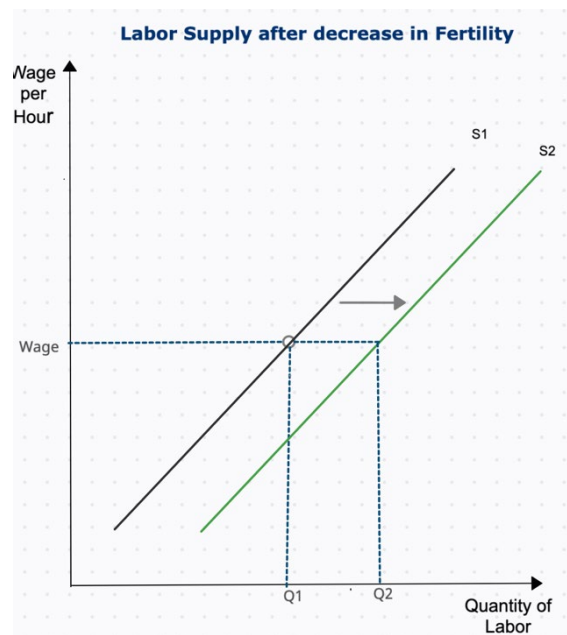


Figure 5 Labor Supply after decrease in Fertility

of children and time allocated for childcare is linear, a decrease in fertility rate (decreasing the number of children per women) will increase the time available to work. This will shift the

labor supply curve outward (from S1 to S2) as women will have more hours to allocate. They find that on average, with each additional child, female labor force participation decreases by about 10–15 percentage points in the age group 25–39, and about 5–10 percentage points in the age group 40–49. Similarly, other papers have found different aspects—like stigma of sexual violence, transportation infrastructure, familial obligation, income, and education of husband, etc.—that shift the female supply curve, some of which we will consider later in the paper. We will explore some of these in detail later in the paper.

Equilibrium:

The point of intersection of labor demand and supply (where supply = demand) is the equilibrium which decides the market clearing wage. Any other wage will create an upward or downward pressure on wage (with too many jobs or too many workers) (Borjas, 1999). It is important to understand the mechanism of labor market equilibrium as a shift in the supply or demand curve of labor will change the equilibrium wage rate, creating a trade-off between addition wage and the reason for the shift. This trade-off is essential to consider as it impacts both the quantity of labor supplied and demanded which gives us the basis to understand the reasons behind the decision to work.

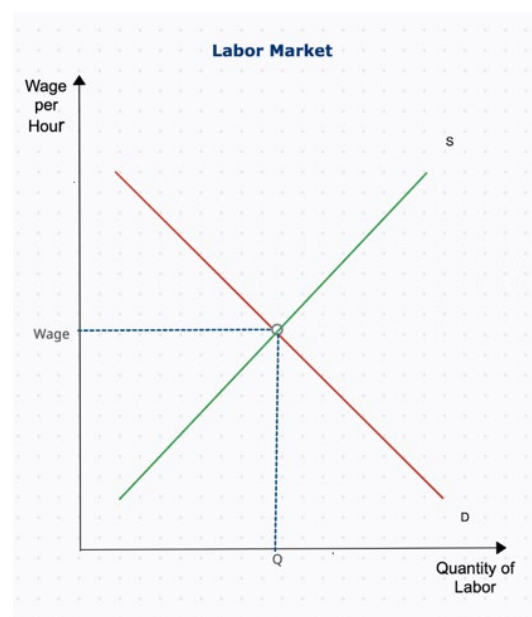


Figure 6 Labor Market Equilibrium

Transportation barriers as a factor affecting Labour Market:

This paper will focus on transportation barriers that are faced by females and how that shapes the employment of females by impacting the labour supply and demand affecting the labour force participation. Transportation, even without the additional aspects of safety and stigma, is an opportunity cost for the workers. The longer the transportation to the workplace, the more time that the worker is spending to get to the work and less time on other activities like working, leisure, or non-market household work. This means that there is an opportunity

cost of time where the worker must choose between spending time traveling as compared to other activities. In their paper, Larson and Lew (2013) explain time as utility-generating consumption commodity which allows us to assign value to time relative to wage (Larson et al, 2013). This would mean that the workers demand more wage for their time when there is an increase in transportation to the workplace. This shifts the labour supply curve to inward from S1 to S2, as the workers would reduce the quantity (from Q1 to Q2) of labour provided for the same wage. However, in India (and other parts of the world) there exist additional transportation barriers for women, other than transportation time.

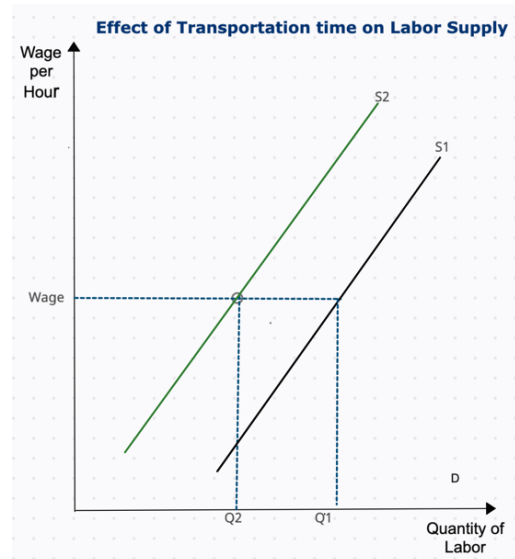


Figure 7 Effect of Transportation in Labor Supply

Conceptual model:

This transportation barrier might not work independently and have other factors that lead to a decrease in the female labor force participation. In this paper we consider two factors that might impact the labor force participation of women in India: familial support and safety.

Familial Influence

Family of a person is extremely important in establishing the providing support and establishing confidence. The family not only initially provides financial and emotional support, but also can provide logistical support that might encourage labor force participation. For women, this support is especially important as, due to societal expectations of responsibilities, extra burden might fall on their shoulders. Hence, having additional support might encourage the participation of women in the labor force. In India, the opinion of parents and spouse is given higher regard, which means that they might play a big role in influencing their decisions about education and work. The family of a women can be restrictive or supportive, which might impact the ability and willingness of a women to work.

The restrictive familial influence might limit the women from taking decisions that they desire which may confine them from reaching their full potential. Women in India, and in other parts of the world, are perceived to have additional responsibility as they are expected to take care of the household, provide childcare, and do chores. If the family of the women have similar

expectations, then they would consider that the women's time is well utilized at home taking care of the family, which increases the opportunity cost of working. Consider the labor supply curve. This would mean that the workers would demand more wage for their time when there is an increase in opportunity cost to attend work as it would take away from the time spent on household responsibilities (as explained in the methodology section). This shifts the labour supply curve to inward from S_1 to S_2 , as the workers would reduce the quantity (from Q_1 to Q_2) of labour provided for the same wage. This restrictive influence would lead to a decrease in the willingness of women to work at a given wage rate.

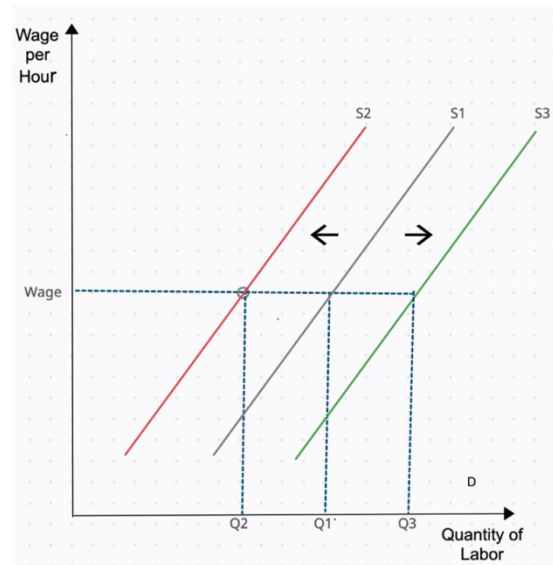


Figure 8 Family influence on Labor Supply

This restrictive influence would lead to a decrease in the willingness of women to work at a given wage rate.

On the other hand, influence of family could also encourage the women to take decisions that they desire which may not only allow but also assist them in reaching their full potential. The family being extremely supportive—financially, emotionally, or logistically—might have an encouraging influence leading to a decrease in the barriers to work at a given wage rate, hence, decreasing the opportunity cost of working. This decrease in opportunity cost leads to an increase in the number of hours women are willing and able to supply at a given wage rate. Consider the labor supply curve. This would mean that the workers would be willing to work more hours at a given wage rate when there is a decrease in opportunity cost in terms of time spent in chores and support. This shifts the labour supply curve to outward from S_1 to S_3 , as the workers would increase the quantity (from Q_1 to Q_3) of labor provided for the same wage.

Safety

The feeling of being physically safe in one's environment is extremely important as it influences the person's wellbeing, health, and productivity. More recently, The United Nations Sustainable Development Goal (Number 11) requires that we make cities and human settlements inclusive, safe, resilient, and sustainable (UN, 2022). This feeling of safety becomes especially important when a woman is decision to choose whether to work. In this paper, we consider two kinds of safety concerns in regard to working: safety during commute to work and safety at work.

Felling unsafe during commute to work might happen due to the existence of sexual assault or robberies on the way to work. If there is an increase in crime against women, then women are taking a higher risk by going to work which would increase the opportunity cost of working. This opportunity cost becomes larger if the commute to the workplace is longer. To compensate for this risk, the women would demand more wage for the same quantity of work. In the labor market of women, this shifts the labour supply curve to inward from S1 to S2, as the workers would reduce the quantity (from Q1 to Q2) of labour provided for the same wage. Addition to feeling unsafe during the commute to work, it could be the case that the women feel unsafe within their workspace due to sexual assault or harassment. If that is the case, then the women will have to pay an additional cost of going to work which would increase the opportunity cost further. This would shift the labour curve more inward from S2 to S3.

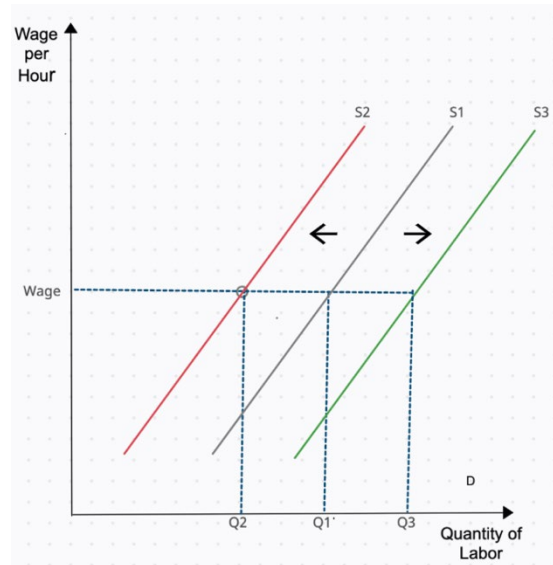


Figure 9 Safety on Labor Supply

On the other hand, if the women feel safe during their commute to the workplace and within workplace, then their will opportunity cost for going to work would decrease. This would mean that the workers would be willing to work more hours at a given wage rate shifting the labour supply curve from S1 to S4. These safety considerations would depend on various factors, be it the type of job, working hours, location of the work, etc. and we would require evidence to understand whether this theoretical model is true.

Ethnographic Insights:

As this aspect is more sociological, I conducted interviews to confirm the conceptual model and get a deeper understanding of the social factors involved in decision making. Doing so helped understand beyond the numbers and comprehend the social aspects affecting the decision to work for women. I tried to understand whether the theoretical assumptions made about familial influence and safety being a part of the decision making were replicated in reality.

I attempted to diversify the background of the women whom I interview to vary in age, sector, education level, and employment status, which helped me get a broader perspective into

the social mechanisms that impact the decision to work of women. I interviewed seven women, two of those were recent employed graduates (within the last 4 years), three were employed for at least 5 years, and two were unemployed. This provided me with a wide range of perspectives spread over age and experience. I asked them questions about the factors that they considered while deciding where and what to study during college, and whether and where they choose to work². These factors included who influenced them in making this decision of joining the labor force, whether crime was a factor in this decision-making process, how long the commute to their work, etc., to understand in depth the thought process behind their decision making.

While interacting with these women, I found that our assumptions were supported by the factors that affected their decision making however, the effect of these factors is different on different women.

Familial influence:

All 7 women agreed that their family, either parents or spouse, played a big role in influencing their decisions about education and work. Additionally, 4 out of the 7 women changed their career path based on the advice of the family. This influence looked different for different women which affected their ability to work in distinctive ways:

1) Restrictive Influence

A recent college graduate with a major in Psychology who now is studying to get into grad school said the following. “I got into my dream school (in Delhi). It is highly competitive and only 5% of the people who apply to it get in. Although I wanted to go, my dad thought it was for the best that I stay close to the family. It’s very unsafe in Delhi.” She instead ended up going to a state school close to her family, which restricted the job opportunities as there was not enough demand for a psychology major in her village. Another interviewee, a 43-year-old woman who wanted to be a lawyer said that after getting married she left education mid-semester to take care of her family. “I wanted to work, but my mother-in-law thought that it was irresponsible of me to do so. At the time it made sense, but I wish I completed my masters as it would have given me options in the future.” In a situation like this, where women are able and willing to work towards their goals, the family influence works as a restrictive force. Both the interviewees were unable to join the labor force due to the influence of the family.

² Consider Appendix to find the questionnaire

This restrictive influence leads to a decrease in the willingness if women to work at a given wage rate. In the first situation, dad's perception of the lack of safety and the distance from the family made the opportunity cost of going to Delhi high. Similarly in the second situation, the mother-in-law of the interviewee thought that her time was well utilized at home taking care of the family, which increased the opportunity cost of working. This shifted the labor supply curve inward as seen in figure 8.

2) Encouraging Influence

A 46-year-old physics teacher who had been teaching for over 20 years said, "If it weren't for my family who helped me incredibly in taking care of my children, I probably would have left teaching a long time ago.... I actually thought of leaving my job after having my second child, but my mother-in-law moved in to help me out which allowed me to continue." Joint family, where multigenerational families live together, is a popular familial structure in India. The mother-in-law moving into the family is an example of such a family. Another interviewee, a recent engineering graduate who left her village started working in Bangalore (a metropolitan city) said the following. "I love my parents. Not only did they support me financially and emotionally, but they also inspired me to become an engineer. They were so supportive throughout the 4 years and believed in me even when I didn't." In a situation like this, the family influence works as an encouraging force and pushes the women to achieving their full potential. Both the interviewees were able to join the labor force due to the influence of the family.

In the first situation, the mother-in-law moved into the interviewees house to help with childcare and chores which decreased the time that the interviewee needed to allocate for such activities which decreased the opportunity cost of the interviewee to go to work. Similarly in the second situation, the parents of the interviewee provided her with financial and emotional support giving her the courage to leave her village to go to a bigger city to get her job, which led to a decrease in opportunity cost of moving out for work. This shifted the labor supply curve outward as seen in figure 9.

Safety

All 7 women that I interviewed, 5 were employed and had different types of jobs, which affected their perception of barriers and stigma. Two of the women were teachers, one was a mechanical engineer, one a dance instructor, and one a psychologist. In discussion with the women, I realized that due to the different natures and demands of the job, the decision-making

process for each job (and Interviewee) was unique. I found that for the people I interviewed, time commitment of the job changed the safety considerations:

1) Safe Environment:

These jobs do not require their employees to stay out of home shorter which changes the safety considerations. When asked if safety was one of the factors in deciding whether the interviewee worked or not, the interviewees who were teachers responded that this was not even a consideration in their decision making. As the average hours in Indian schools are from 7am to 3 pm, most of the teachers are back home by midafternoon. One of the teachers drove a scooty (two-wheeler vehicle) to school and another used public transport; and both the teachers said that they felt safer travelling during the daytime. Feeling safer during their commute to work decreases the opportunity cost for the interviewees. This shifts the labour supply curve to outward from S1 to S2, as the workers would increase the quantity (from Q2 to Q1) of labour provided for the same wage. Additionally, as the teachers lived closer to their workplace, the commute took less time and was in a neighborhood that they were familiar with. Spending less time in transportation would provide the interviewees with more time that they can allocate for chores and other activities. This would additionally decrease the opportunity cost of working as it would encourage them to join the workforce. This decrease in opportunity cost would lead to an increase in the number of hours women are willing and able to supply at a given wage rate. This would shift the labour supply curve further outward from S2 to S3.

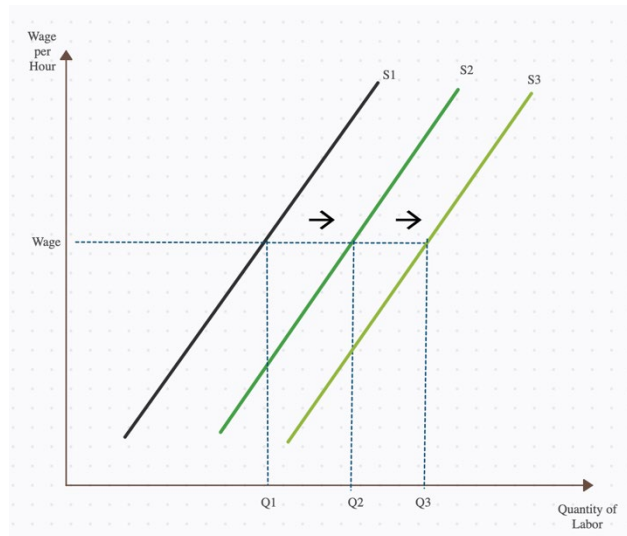


Figure 10 Effect of safe commute and work environment on Labor Supply

another used public transport; and both the teachers said that they felt safer travelling during the daytime. Feeling safer during their commute to work decreases the opportunity cost for the interviewees. This shifts the labour supply curve to outward from S1 to S2, as the workers would increase the quantity (from Q2 to Q1) of labour provided for the same wage. Additionally, as the teachers lived closer to their workplace, the commute took less time and was in a neighborhood that they were familiar with. Spending less time in transportation would provide the interviewees with more time that they can allocate for chores and other activities. This would additionally decrease the opportunity cost of working as it would encourage them to join the workforce. This decrease in opportunity cost would lead to an increase in the number of hours women are willing and able to supply at a given wage rate. This would shift the labour supply curve further outward from S2 to S3.

2) Later ending jobs (Mechanical engineering/ dance instructor):

When asked if safety was one of the factors in deciding whether the interviewee worked or not, the interviewee who was a mechanical engineer responded that this was a major consideration. “Mechanical engineering as a field is very male dominated. In my batch (class of graduation) there were about 2000 boys and 150 girls. This gender difference is also visible in the workplace,” said the interviewee. Gender difference in work was a cause of concern for

her and her family as it is perceived more unsafe to work due to the potential of sexual harassment. Additionally, she explained how generally working till late at night added additional concerns about getting back home at night. As housing around bigger firms was more expensive, she lived farther from her work making the commute that she had to do at night longer. Due to the nature of the field, she was worried about sexual harassment inside and outside the workplace.

Fear of sexual harassment in the workplace would increase the opportunity cost of working. Hence the employee would ask for additional wage for the same amount of work to compensate for this cost shifting the labor supply curve to the left (from S1 to S2). Additionally, the added transportation which leads to more safety concerns further increases the opportunity cost shifting the curve from S2 to S3. If the women who face these additional costs are not given a higher wage, they are more likely to leave the workforce.

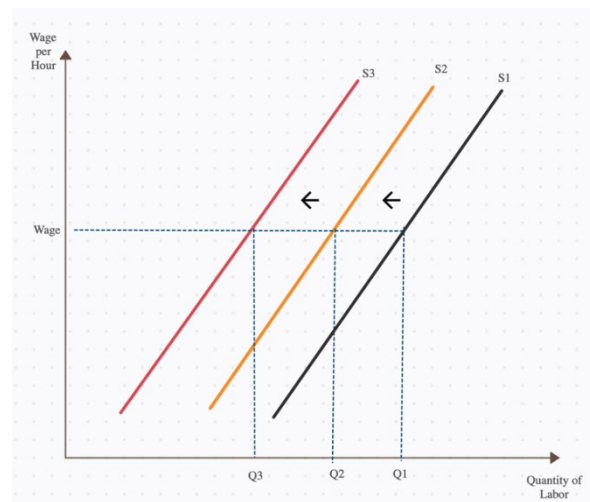


Figure 11 Effect of unsafe commute and environment on Labor Supply.

As seen from the ethnographic insights, the theoretical model that we constructed earlier in the paper stands true since both, familial influence, and safety concerns, impacted the decision of the interviewees to join the work force. The responses of the interviewees shifted the labor supply in both directions; therefore, we need to consider the data to understand which model of the suggested is prominent in the present situation.

Evidence through data analysis:

As we noted earlier, the Female Labor Force Participation has been decreasing significantly. This decrease in FLFP suggests that the effect of influences that shift the Labor supply curve inward are stronger than those that push it outward. This means that there might be a larger presence of restrictive families and increase in unsafe nature of travel and working conditions that would decrease the labor supply.

To understand how the two aspects react in the recent years, it is important to note the change in crime over the years. This decrease in FLFP is also combined with an increase in the crime rate. With an increase in crime rate against women by 53% in 2019 as compared to 2010 (outside of household: like rape, sexual assault, and chain stanching), transportation has increasingly become unsafe (NCRB, 2019). There has been an increase in rape cases (by not family members) that went to trial in India from 22172 cases in 2010 to 33034 cases in 2019. There is a decrease in crime in 2020, however I believe that might be because of the COVID pandemic as people were not leaving house as often due to the restrictions.

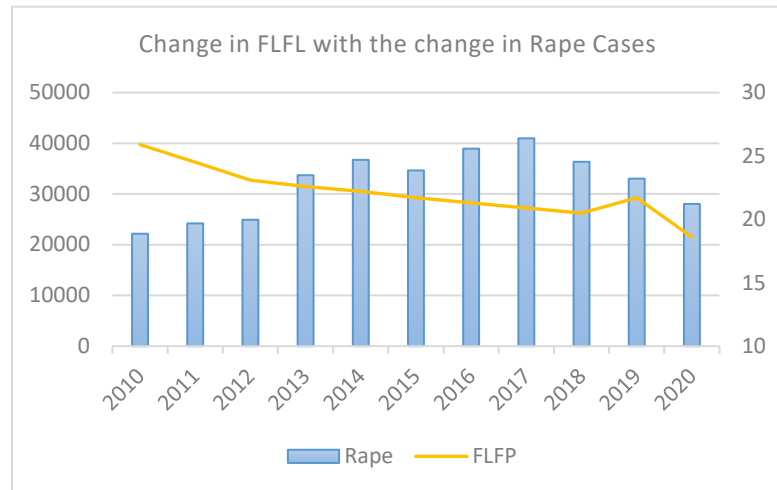


Figure 12 Rape Cases Plotted with Female Labor Force Participation

Additionally, the crime against women in general has increased by 19% in 2019 as compared to 2015. Chakraborty et al. in their paper discuss the theoretical framework that suggests that a woman take the decision to work or not after comparing the benefits of working with cost of working. They conclude with their empirical analysis that women are 8 times more likely to drop out of low-wage jobs compared to high-wage jobs, for the same increase in the rate of crime against women (ibid). We need to understand how this increase in crime rates works with other factors that impacts the FLFP: Restrictive families and Unsafe environment.

Restrictive families:

Various research and journal articles have discussed the restrictive attitude of Indian families towards women. Indian society, being a largely conservative and patriarchal, blames the women for sexual assaults and crimes against women which causes higher negative consequences for the victim rather than the offender (Das, 2021). The increase in crimes—like rapes and assaults—in the society might lead to the families becoming more restrictive to protect the well-being of their daughters.

Additionally, Anukriti and Herrera-Almanza in their research found that mothers-in-laws play a big role in influencing the decisions of women, especially through the choices of mobility (Anukriti and Herrera-Almanza, 2019). After interviewing 671 women in northern India, they found that only 14 percent of those were allowed to go alone to a health facility and

12 percent were allowed to visit the home of friends or relatives in their village by themselves (ibid). This heavy restriction in mobility also suggests these restrictions being applied for the women joining the labor supply. These restrictions, suggested the researchers, might exist due to household expectations of the women (ibid). According to a survey conducted in 2019, roughly a third of adults (34%) feel that childcare should be handled primarily by women (Evans, 2022). This could also be sparked by the concern to protect the 'purity' of women as being assaulted might impact the reputation of the family negatively.

This would mean that increase in crime led to an increase in the restrictive nature of the families, which would in turn explain the decrease in labor supply.

Unsafe:

Increase in crimes like assault and rape, that happen outside the household, would intuitively make it more unsafe for women to leave to house for any purpose. As for women to work they must commute to their workplace, the increase in crime will make commute to work more unsafe for woman which might decrease FLFP. Furthermore, there exists a higher commute time in urban metropolitan cities, as people spend about 7% of their day or 1-2 hours in commute to work, which makes the unsafety of the commute a more probable variable in deterring the decision to work for woman (ET Bureau, 2019).

Additionally, in recent years, the composition and type of jobs practiced by women in urban cities has changed significantly. In recent years, the share of women doing agriculture related work in the city is less than 90% (IWWAGR, 2012). Of these, the share of women described as being engaged in high skilled occupations, including administrators, managers, professionals, and associate professionals, also increased substantially, from 22.6 per cent in 1993-94 to 36.4 per cent in 2011-12 (ibid). This increase continues in recent years, where the employability of women has increased to 45.67% with better skill training for entry level jobs (Kumar, 2022). Due to the change in sector of jobs of women with an increase in high skill jobs requires, the women need to work longer hours which might make the environment more unsafe for woman. Not only does longer hours imply traveling back home later in the night, but it also requires staying longer in the office. With an increase in sexual harassment in the office and the lack of reporting of such issues created a highly unsafe environment for women even inside the workplace (Jhaveri, 2021).

The ethnographies combined with the evidence for increase of restrictive families and unsafe nature of environment would lead to a decrease in the labor supply of women in India.

Total Effect on the labor:

As complexities exist in the real world, multiple factors are acting simultaneously causing intersectionality in the impact on FLFP of urban cities in India. To understand the total shift, we need to consider different factors at the same time. The total effect on the supply side of labor market is understood by understanding the effect of the restrictive families and unsafe environment together. As shown above, having restrictive families would shift the supply curve from the equilibrium at A inwards from S1 to S2. Additionally, the existence of unsafe commute and work environment would shift the curve further inwards from S2 to S3. At the same quantity of labor from the equilibrium at A, the female workers would demand higher wages of W4 to compensate for the restrictive family and unsafe effect. The current demand of labor (D1) would offer wages of W3 at the equilibrium of B, decreasing the quantity supplied from Q1 to Q2.

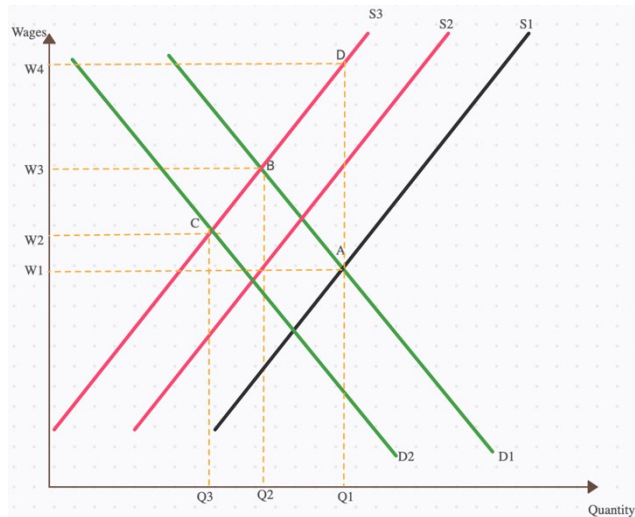


Figure 13 Total Effect of the labor market

At the same quantity of labor from the equilibrium at A, the female workers would demand higher wages of W4 to compensate for the restrictive family and unsafe effect. The current demand of labor (D1) would offer wages of W3 at the equilibrium of B, decreasing the quantity supplied from Q1 to Q2.

However, as seen from the literature review, the demand for labor for females in manufacturing and high skill sectors is stagnant or decreasing in most urban areas (Kalsen and Pieters, 2015). Additionally, some articles have shown how an increase in crimes and sexual harassment cases against companies make women seem like a liability in comparison to their male counterparts, decreasing the demand for women in the labor market (Aguilera et al, 2021). This would shift the demand curve from D1 to D2, decreasing the wages down from W3 to W2 further decreasing the quantity of labor from Q2 to Q3. In total, the impact of these effect decreases the quantity of labor from Q1 to Q3 decreasing the female labor supply.

Ethical Discussion:

The three important aspects of an ethical framework that promoting human dignity are well-being, liberty, and equality (Pickett, 2022). All three of these are important for a person to live a life if dignity and happiness. In this paper, we are primarily focused on how during prioritizing the well-being of women, their liberty might be compromised. Placement of

restrictions on women by their families to protect them takes away from them their authority to choose how they wish to live their lives. Similarly, not having authority and safety on the commute to and inside of the workplace also reduced the liberty of women as it restricts their choices. This puts them in an unequal standing as compared to men who do not face the same restrictions and barriers. I use this framework along with Martha Nussbaum's capabilities approach to understand how these would impact the freedom of woman.

Martha Nussbaum's theoretical framework of the capabilities approach believes that there exists ten universal, normative capabilities that act as freedoms for a human being. (Nussbaum, 2005). Nussbaum believes that these 10 aspects of life are essential for a human to have to live a free life and are necessary to build other capabilities throughout life ((Stewart, 2001). However, of these 10 capabilities, women in India who have restrictive families and work in unsafe environments compromise on 3 of those: bodily integrity, practical reason, and control over one's environment. Firstly, Nussbaum considers bodily integrity to be the ability to move freely from place to place and being able to be secure against violent assault, including sexual assault (Nussbaum, 2005). With an increase in crime and assault in India, this capability is being compromised as women are in danger of being assaulted. This impacts the well-being aspect of women in India. Secondly, Nussbaum considers practical reason as the ability to form a conception of the good and to engage in critical reflection about the planning of one's own life (ibid). However, in a situation where women are living with restrictive families, they take this liberty of the women by deciding for them what is allowed and what is not. This snatches from them the ability to understand for themselves what is best for them, Lastly, Nussbaum considers one of the aspects of control over one's material environment as the ability to have the right to seek employment on an equal basis with others. This is clearly being compromised here as the additional barriers and stigmas are leading to the women having an unfair disadvantage in the labor market as compared to boys.

According to Nussbaum, the women in India would not have all their capabilities and would be considered not free. However, this might not be the case as to truly understand the dynamics of how the decision-making process of women and what restricts them requires a deeper understanding of the social structure and the power underneath the appearance of restriction. After the interviews I realized that most women, although were influenced by the opinions of family, valued their opinion by choice (as much as there exist self-perception of choice). Therefore, we need to be mindful before making generalization about the restrictions and abilities of an entire section of community and there need to be further research to understand the dynamics behind these decisions.

Policy Recommendation:

To increase the labor force participation of women in India, there needs to exist threefold policy changes which focuses on creating a safer environment inside and outside of workplace which would target the supply of labor and focuses on increasing demand of female labor.

To create a safer environment for women outside of workplace and during commute to work, there needs to be policy that invests in safe, efficient, and proximate transport for women in urban spaces to reduce travel times as well as increase safety. To increase the trust in law enforcement, policies should focus on taking stronger action against assault cases would encourage women to feel safer in the environment. As victim blaming might be a concern for restrictive families, there needs to be policies that encourages and supports women in these cases.

To create a safer environment for women inside workplace might start by redefining the definitions of assault and spreading awareness about power dynamics in the workplace that might lead to assault. Holding public and private organizations' accountable for creating an environment that allows victims of workplace sexual harassment to bring their claims forward with confidence. Then having a safety net for those who are assaulted and offer support that provides the flexibility to leave situations of discomfort when encountered with workplace harassment. Additionally, requiring both men and women to take longer maternity and paternity leave might remove the expectation from women alone to take care of children and give equal opportunity of hiring for both men and women. Furthermore, promoting industries that allow for more flexible work schedules and providing better and affordable childcare facilities might also remove the burden and provide flexibility for the women to work (Chatterjee, 2021).

Lastly, to increase demand of labor, the government should focus on job creation by providing incentives for companies to expand and grow. With the growth in the employable population of the country and stagnation of the growth in demand of labor, without investment in labor-intensive growth, half or more of the urban workforce will remain self-employed by 2030 (Chen, 2011). This increase in job creation is only possible with the assistance of government on focusing subsidies and polities in sectors that will create jobs for women like manufacturing and services.

If the policies to make the commute and workplace safer are implemented, it would remove a concern of the women encouraging the participation of women in the workforce,

shifting the supply curve outward. This along with better law enforcement and provision of support like childcare and flexible hours would make the restrictive families comfortable with the women joining the FLF. And an increase in demand would allow more women to join the labor force which might altogether increase the FLFP.

Limitations of Interview based approach:

The women I interviewed were limited to my social network and people I was able to contact. This might lead to selection bias as they might share many characteristics that might affect their responses. Although varying in age, region, and level of education, most of the women I interviewed belonged to middle class families which might affect their outlook and perception of society and social norms. Although partially biased, this paper nevertheless gives us insight on the factors that affect the decision of women of joining the labor force making our conclusions and policy recommendations considerable.

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