EDITORIAL NOTE

-Editors

The present issue for Volume V consists of four articles. They belong to the discipline of Law and Economics and range from a wide variety of topics like welfare impact analysis of a government policy meant for menstrual hygiene in the state of Punjab in India, economic analysis of defensive medicine and medical practices in India, measurement of the economic value of an Indian women's household work and implications of the steel tariffs imposed by United States on steel import patterns of India.

The paper titled, **"Measuring the economic value of Women's Household Work"** authored by Shruti Thakare and Kanan Shivhare, analyses the economic value of unpaid household work. The paper delves into the nature and causes of unpaid employment and its substantial impact on the economic participation rate. It looks at the overall macroeconomic consequences of keeping household work from outside the purview of 'economic activities'. The authors conducted both doctrinal and empirical research to come at their findings. The empirical study was conducted in the Surat City of Gujarat and Bhata, a hamlet in Gujarat state. The paper concludes by pointing out the views and beliefs ingrained in this society about women and household work.

The paper titled, **"Defensive Medicine and Medical Malpractices in India: An Economic Analysis"** authored by Dr. Manoranjan Kumar and Dr. Shivani Mohan analyses the correlation of the modern practice of defensive medicine with medical negligence from an economic point of view. The article is segregated into five fragments, dealing with the nature of the existing market relationship between the two, along with examining the role of insurance industry in dealing with medical negligence claims and their unintended consequences upon the socio-economic picture of the country. Furthermore, the legal aspect responsible for regulating the market for defensive market is also analyzed. The last fragment consists of the conclusion that has been drawn, along with certain recommendations that can be helpful in altering India's healthcare structure, currently ridden with these drawbacks.

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The paper titled, **"Welfare Impact Analysis of Menstrual Hygiene Policy through Empirical Study in Punjab"** delves into the paradox that exists between the apparent beneficial impact that the government is desirous of, through the introduction of the menstrual hygiene policy (Jan Aushadhi Suvidha Oxo-Biodegradable Sanitary Napkins) and the ground situation. The author, Jyoti Jindal, conducted an empirical study in the Ludhiana district of Punjab and analyzed the responses that were collected from women belonging to the lower income strata. The causation of the gap is thus presented, whilst providing possible solutions to rectify the same.

The paper titled, "**Implications of United States Steel Tariffs on Indian Steel Import Patterns: A Case of India's Preferential Trade Agreements and International Trade Law**", authored by Z. Hussain and A. Iliyan, analyses the factors responsible for the surge in imports of steel products in India immediately after the implementation of tariffs on steel products by the United States. The authors have mainly utilized Bilateral Revealed Comparative Advantage, Export Intensity Index and SMART partial equilibrium modelling tool as methodology. The study conducted by the authors shows that India witnessed a sudden surge in imports post the implementation of these tariffs, specifically from its preferential trade partners. The paper looks at the compatibility of these tariffs with the General Agreement on Tariffs and Trade, World Trade Organization (WTO) law and WTO ruling on these measures to suggest key trade policy measures that can be adopted by India to counter such a situation in future. The paper concludes by suggesting two key policy measures that could be adopted by India in future when a similar situation arises.

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MEASURING THE ECONOMIC VALUE OF WOMEN'S HOUSEHOLD WORK

Shruti Thakare and Kanan Shivhare[1]

ABSTRACT

The "unpaid household work" as recognized by the society is often not considered to be a productive activity or a work having an economic value attached to it. However, Unpaid domestic work is indeed an important and an indispensable factor which contributes not only to the smooth functioning of a household, but also to the economy. The conventional economy often fails to recognize this aspect of work where women stand hidden and unacknowledged. This type of work was termed as the 'Economy of Care' by Elson (1995)

Understanding the nature of their unpaid employment is critical, since it has a substantial influence on their economic participation rate. Due to several factors like the stereotypical gender roles, social and religious constraints, the patriarchal set up of the society and the low opportunities for women in the market, women often end up engaging in unpaid domestic work. Therefore, a broader context of household, state, market, and activity should be seen through a macro lens in order to accelerate women's status in the economy.

Women are put under the shadow of invisibility because of their predominance in household work, hence keeping them from the purview of 'economic activities' and outside the production boundaries and economic policies of the country. Consequently, such ignorance of their contribution to economic activity, growth and well-being creates serious macroeconomic consequences. This study project aims to address the repercussions of portraying hard working Indian women as economically ineffective and undervalued in their domestic duties. In addition, the aim of this research paper is to recognize the scope and elements that impact Indian women's status as unpaid houseworkers.

1. INTRODUCTION

In a diverse country such as India, the law regards and holds both men and women equal in order to create an egalitarian society, wherein the constitution aims to provide equal rights and opportunities to everyone irrespective of the gender. Nevertheless, the age-old patriarchy in our society hinders the growth and development of women and binds them to the traditions and

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stereotypical norms of the society. Even in the 21st century, people are of the opinion that daughters/girls pose a liability to the family since they are believed to be unproductive and inferior as compared to men.

In addition to the patriarchal mindset that runs deep in our society, there also arises another problem of labelling women as having no 'job' as what is usually defined by the society. It is often considered as a women's imperative to perform all the household work and the day-to-day chores of the family. However, this tiring job is still not considered to have any significant practicality attached to it since it can't be monetized and therefore it is given little to no social or economic value in the society which consequently labels women as 'second-class citizen'

Unpaid tasks are a very significant part of any economic activity, which is necessary for the overall and holistic development of the people as well as their standard of living, health and wellbeing. Nonetheless, unpaid employment has been overlooked in economic assessments and policy formulations, whether in the form of economic production of items for personal consumption or home services.

The area of study and the issues as discussed in this paper have various goals which include cognizance of women's household work and appropriating the value of their unpaid work, including the domestic chores. The meagre presence of female workforce in the employment sector has aggravated this issue, which particularly becomes relevant in India since their participation is gradually receding, owing mostly fulfil their ''domestic responsibilities.'

2. RESEARCH FRAMEWORK

Women's unpaid household work and its monetization:

2.1) Gender and unpaid work

2.2) Replacement value method

2.3) Opportunity cost method

3. THEORETICAL FRAMEWORK

Unpaid labour consumes a significant percentage of women's time. Women's creative contributions to household maintenance, providing for family requirements, delivering, and rearing the next generation are devalued, and the majority of women's labour is hidden. As a result, women's working circumstances and the economic value of their labour are undervalued. However, the study's importance is accompanied with considerable methodological challenges in its execution.In a country like India, just 22% of women work, and 70% of them are involved in informal agriculture activities with meagre lucrative remuneration or recognition in the society, and almost no social protection. Males spent an average of 83 minutes on unpaid household duties throughout the world, while women spent 265 minutes, or more than three times the time spent by men.

In India, women spend more than 297 minutes on household activities, while men spend only 31 minutes[2]. During the search for a suitable method to assign economic value to women's work, many questions arose, including the wage assigned to these tasks, whether to assign wages based on the number of hours women work (and the manner in which multi-tasking is to be handled), and what wages to use in such calculations.[3] This gender segregation in unpaid household activities reflects a set of cultural customs and assumptions about a "normal" home division of labour, as well as macroeconomic policies and practises that ignore the presence of unpaid domestic work and instead exacerbate the economic burden.

Two Principal Methods have been used for Measurement And Imputation namely:

a) *Replacement value* method: Calculated using current hourly wages for comparable work to determine how replacing unpaid workers with paid workers would cost.

b) The opportunity cost method: It is the method which computes the Individuals' unpaid work and the amount of time spent on it by considering their hourly wage rates, both for men and women, and further multiplying it by the number of hours worked each day.

4. INFLUENCE OF THE POLICIES ON THE RESEARCH FRAMEWORK

[2] Natasha Chaudhary Et Al., *Women's Economic Contribution Through Their Unpaid Household Work: The Case of India*, ESAF and HealthBridge, 2 (2009) https://healthbridge.ca/dist/library/India_summary_report_final.pdf.
[3] Ibid.

Cooking, cleaning, washing, gardening, repairs, home shopping, household administration, travel linked to housework, and additional housekeeping duties such as childcare are all considered housework. These activities are expected to account for a significant portion of total

home and childcare expenses. Any other sort of employment in these sectors, on the other hand, is not included in our compensation calculations, meaning that our estimates for domestic and childcare labour are a lower-bound figure. Furthermore, utilising employment records, tax filings, or other data, a person's economic contribution to the home from outside labour may be simply assessed.

Economists, on the other hand, continue to struggle to measure the economic contribution of home labour, or household output. As a result, it is critical to recognise women's economic contributions to home production, as they outweigh men's contributions on average, even in single-family households. No economy could run without competent care of the younger generation, who will further contribute to the economy in future. The housework is also crucial to make the living for adults more comfortable and convenient.

Due to the unpaid nature of such work, it becomes generally difficult to estimate its economic worth. However, in order to fully know the economics of the house, one must first comprehend the economic worth of the labour produced within it. This study's key contribution is the introduction of a fresh technique to domestic work appraisal. To develop a more comprehensive understanding of the economic value of such unpaid work, the freely accessible and free data on real earnings has been used. This value can be used to calculate the economic value of such work. National accounting offices may find the technique given in this paper particularly valuable for establishing household-specific satellite accounts to augment gross domestic product estimations.

5. WOMEN'S UNPAID HOUSEHOLD WORK AND ITS MONETIZATION: INTERPRETATION OF DATA

5.1) Unpaid work and its relation to gender

A study was carried out combining various quantitative and qualitative methods. It was agreed to use an interview schedule. The sample includes 25 urban males and 25 rural men, as well as

75 urban women and 75 rural women, for a total of 50 men and 200 women. There were no married couples among those who took part.

Surat City in Gujarat, was selected for covering the urban aspect of the research, whereas Bhata, a hamlet in Gujarat state, was chosen for the rural component. In a country the size and variety of India, picking only two locations was not sufficient for an appropriate representation, taking into account the nation's population and diversity.

Additionally, it is also important to take cognizance of the fact that the tasks performed by women in India may differ from the tasks performed by women from other countries, the study's overall findings should be broadly applicable across India. The respondents were asked for basic socioeconomic information such as their age, educational qualifications, employment status, monthly income, marital status, and their status in the family.

Table 1 shows how men and women are reported to be involved in different home chores. As the data illustrates, women are substantially more active in domestic duties than males. Contrary to common assumption, guys contribute to domestic duties as well. Women, on the other hand, were far less likely to engage in such activities.

TABLE 1: HOUSEHOLD TASKS AS PERFORMED BY MEN AND WOMEN

TASK	MALE	FEMALE
Housecleaning	26	90
Laundry	20	81
Fixing floors made of mud	0	41
Arranging mattresses, putting up and pulling mosquito netting	14	55
Doing the dishes	6	87
Drying and collecting the laundry	20	85
ironing, folding, and storing garments	12	19
Food preparation and service	28	86
Gathering firewood or other fuel-related goods	14	29
Hauling water	24	55
household work supervision	34	35
assisting with the family business	34	35

Table 2 shows the self-reported frequency of engagement in caring for family members by men and women. Using this technique, the value of unpaid employees is measured by multiplying the cost of paying a substitute by the current wage for equivalent labour. If a house help did the same work, a value would be assigned to it; similarly, unpaid labour is assigned the same value. This allows for a realistic (under)estimation of the contribution made by women through unpaid labour to be measured. (Because maids are typically underpaid as a result of the low value put on homework, the mistake is most likely an underestimation of value.)

TABLE 2: RESPONDENTS PARTICIPATION IN CARETAKING

CARING FOR FAMILY MEMBERS	MALE	FEMALE
Looking after children	24	60
Taking care of the sick	4	7
Taking care of husband/wife	0	52
Tutoring children/assisting with homework	20	25
Transporting kids to and from school	20	21
Feeding and taking care of visitors	4	5
Managing household accounts and paying expenses	52	17
Buying groceries	80	65
Purchasing clothing and other household stuff	76	56
Managing the Family	40	27
Taking the ill to the doctor	12	7

In the majority of the households questioned, women, particularly wives or daughters-in-law, were the first to climb. Only 15% of the households said the male responder was the first to rise. Both male and female respondents believed that it was largely the responsibility of women to wake up first in order to guarantee that her family members had breakfast on time, to clean the house and its environs, to prepare lunch, and so on. These findings were unaffected by the woman's job status; she was in control of all early morning household duties even if she worked outside the home.

According to 57% of women and 38% of men, women should be responsible for cooking, looking after children, and caring for the elderly. Men who responded were adamantly opposed to cooking or taking care of children or the elderly. The husbands assisted their wives with chores in approximately half of the cases. The scope of this contribution may have been constrained, as seen in Table 2, given that the majority of men were not regularly engaged in household tasks.

Both men and women were asked this question; women claimed their husbands help, but only to a limited extent, while men said they do help, but not on a regular basis and only to a small extent. Lack of time is the most common argument used by men for not taking on household duties. Factors other than this are lack of necessity for them to perform home labour (7%), apprehension to assist (6%), and the fact that it is a woman's responsibility (6%).

Women also stated that they usually did not prefer men engaging in the household activities as they are degrading for them, or indeed any home labour at all. Due to current customs and cultures, men, for example, are not authorised to wash their clothing or clean their dishes. As a result, even when men play a role, they are restricted by beliefs regarding the kind of tasks they are supposed to perform. Two-thirds (64%) of men and women agreed that males should not perform any home labour. Additionally, the majority of men and women said that female family members shouldn't be compensated for the domestic work they conduct; however, nearly three times as many men (14%) as women (5%) disagreed.

Many people are opposed to putting a monetary value on homework, as Health Bridge-supported research in other countries has indicated, yet when asked if such labour is vital, they strongly agree. The issue could lie more with the idea of assigning monetary values to the labour than with its devaluation.

5.2) Replacement value method

To compute the earnings that women make after doing all the household work, firstly segregate women according to their place of living for example: urban, sub-urban etc, then finalise the numerous jobs accomplished by each, then give a market wage to each of the tasks performed.

Even though the situation varied from home to family, the lady slaves' tasks were frequently constrained. Dishwashing, laundry, and cleaning and mopping the house were the main responsibilities of a woman servant in urban areas. A few of them could also cook. The maid

slaves were paid between 150 and 250 rupees for each task every month, depending on whether they worked in the city or the rural areas.

TABLE 3: WORK DONE BY MAID SERVANT AND THEIR PAYMENT[4]

WORK DONE BY MAID SERVANT	PAYMENT PER TASK/MONTH	
	Rural	Urban
Laundry	100	200
Washing dishes	150	250
House cleaning	100	200
Assistance in cooking	300	500
Dusting	100	100
Childcare	N/A	500
Chopping and cutting	300	500
Dropping children to school	N/A	500
Fuel collection	300	N/A

It's vital to remember that women undertake a total of 33 duties, not just those nine. The average price of each of those nine tasks was then compounded by 33 to obtain at a figure for the value of unpaid domestic labour performed as by women. One task costs an average of US$3.0 per month for rural women and $6.1 per month for urban women. When you multiply those numbers by 33, you get a monthly figure of $99 for rural women and $201.3 for city women. These figures add up to $150 every month, or $1,800 per year.[5]

According to the 2011 Census Survey, India's population was over one billion people, with over 623 million men and over 586 million women. There are about 444 million females aged 15 to 64 in the world. When the aforesaid pay data are multiplied by the female population aged 15 to 64, a total of US$ 799.7 billion is obtained (Table 4).

TABLE 4: CALCULATION OF WOMEN'S WAGE

[4] Ibid.
[5] Ibid.

TOTAL POPULATION INDIA	FEMALE POPULATION AGED 15-64	VALUE OF UNPAID WORK BY WOMEN/ MONTH FOR 33 TASKS (US$)		AVERAGE VALUE	TOTAL UNPAID CONTRIBUTION OF WOMEN/YEAR
1.21 billion	444.3 million	Rural	$3*33 = $ 99 Rs. 4950	150*12 = $1,800 Rs. 90,000	US $799.7 Billion OR 39,960,000 trillion Indian rupees
		Urban	$6.1*33 = $ 201.3 Rs. 10,065		

5.3) The opportunity cost method

The current market salary rates were applied for 7 hours each day in this manner. The wage rates for government and private work are different: Rs 100 (under the Union Government of India's flagship employment scheme, the Mahatma Gandhi National Rural Employment Guarantee Scheme [MNREGA]) and Rs 130 (under the Mahatma Gandhi National Rural Employment Guarantee Scheme [MNREGA]) (the rate at which people hire labour for construction and farm-related activities). The monetization specifications based on daily compensation rates are shown in Table 5.[6]

[6] Shiv Narayan Sidh and Sharmistha Basu, *Women's Contribution to Household Food and Economic Security: A Study in the Garhwal Himalayas, India*,. 31(2) mountain res. dev. 102-111, (2011), https://doi.org/10.1659/MRD-JOURNAL-D-10-00010.1.

TABLE 5: CALCULATING WAGE RATE WITH RESPECT TO MARKET WAGE RATES

GENDER	WORKING HOURS (PER DAY)	ACCORDING TO GOVERNMENT RATES [a]	ACCORDING TO PRIVATE SECTOR RATE [b]
MALE	9	128	167
FEMALE	16	228	297

a) Rs 100 per day, or Rs 14.25 per hour, as prescribed in MNREGA

b) Rs 130 per day, or Rs 18.57 per hour

According to this method, women earn 1.8 times more than men when hours spent each day are translated to money. Women's jobs do not have an end, since they engage in the preparation of three meals per day, in addition to taking extra care for the children and elderly. On the other hand, most male household members get holidays (public/private) on various occasions. The profit gap increases much more if we extrapolate for the whole year.

6. FINDINGS AND DISCUSSION

Women's lower wages might be related to a variety of factors. Men earn more than women for equivalent labour in the United States and Canada, which are substantially more egalitarian in terms of gender equality than India, and traditionally male occupations pay more than traditionally feminine occupations. Even if the job is comparable, one explanation for the wage discrepancy is that women are just paid less than males. Women may also be prevented from obtaining higher-paying jobs by discrimination, misconceptions about "acceptable" professions for women, and the inability to work the same number of hours as men and to flourish in their individual fields because of family obligations.

While many of the female respondents stated a desire for financial independence, they also acknowledged that working would prevent them from giving their children and husbands the same amount of care that they could give on their own. Consequently, many of the women

claimed that a sense of fulfilment was the most they could aspire for rather than financial reward from a paid employment. Another obstacle that the women encountered on their path to financial independence was finding a suitable workplace and career.

This was mostly a problem for middle-class families. Even though women were ready to work as domestic servants because of social stigma and cultural expectations, middle-class women were not permitted to do so because of social shame and societal norms. In rural places, the picture was different. Most women could find work, mostly as agricultural labourers, because there was no discrimination between the lower and higher middle classes. Regardless of employment or financial status, housework remained a woman's domain. Furthermore, women who assisted their family's business or worked on the family farm or land saw it as an extension of a woman's obligations rather than a paid employment.

Even though women perform all the housework, many believe they contribute little financially to the household. They frequently lack the authority, trust, and power to make important family decisions. In India, women's status is still relatively low. Women in both urban and rural areas begin their days between 4:30 and 6:30 a.m. and do not come home until after 9:30 p.m. Despite having most home chores, two-thirds of women work part-time to boost their family's income.

Women work for an average of eight hours a day (based on a small sample), after which they are completely responsible for their own household chores, such as cooking, cleaning, laundry, and child care. While spouses occasionally assist wives, women carry most domestic responsibilities, even if they work for a living.

Women frequently multitask, such as holding or nursing a newborn, calming an infant and simultaneously assisting another child with classwork, or caring for the aged while performing other duties like cooking and cleaning. Women's working hours would be substantially increased if each individual activity was considered. Looking at the time allocation of women in their household work it can be deduced that most women have no or very less free time or leisure time and that most women work an average of 16 hours a day, divided between paid and unpaid employment.

Even full-time working women who work an average of 8 hours per day must devote around 8 hours per day to home tasks, in addition to the extra hours required for weekly holidays or vacations. Women are also expected to care for the fields or gardens, pets, and other household activities.

7. CONCEPTUAL FRAMEWORK ON FAMILY LAW AND ITS RELATION WITH ECONOMICS

It is essential to understand how economics and family law interact. To explain and regulate behaviour in each field, economics and law have each developed their own set of standards. The dichotomy is explained in terms of the divide between self-interested and altruistic incentives for behaviour in economics. These borders are understood differently in modern legal and economic systems, and a new set of ideas are developed to describe what constitutes a family.

Various significant and new family economics contributions are made by the conventional legal and economic idea of the family. Among these contributions are the study of family labour specialisation, household production theory, and theories of human capital investment, the trade and altruism paradigms, on which family economics was based.

Even if the conclusions drawn from economic theory are useful, there are still important legal and ethical problems that require consideration. Economics and law have traditionally regarded the family or the household as a fundamentally different sphere of human behaviour from the market. Economists have not examined the work done at home with the work done in the marketplace. Since families or households are typically not considered as economically productive, economists and lawyers usually assume that the family behaves as if it were a single individual when examining consumer behaviour.

A constrained, neoclassical perspective is reflected in statistical metrics of economic production. These metrics simply track market activity. The work necessary to support a family—including child rearing, child care, housework, home upkeep, meal preparation, subsistence farming, and other tasks—is not included unless it is done in exchange for compensation.

According to some economists, there is a significant distortion when non market activity is excluded from planning and public policy. Policy choices based on imprecise information could leave out crucial considerations and regions of production throughout the planning process. As economist Marilyn Waring has observed, "*the distinction between market and*

nonmarket production is a heavily gendered one; work done predominantly by women remains invisible to economic policy makers."[7]

The common law tradition also articulates the idea that "services" rendered in the home are distinct from "labour." Additionally, the law has long regarded domestic labour as unpaid. The law's ability to establish and uphold contracts between household members has also been constrained. Of course, gathering data on market transactions is simpler than attempting to calculate the productive worth of labour done at home. However, economists frequently adjust their data to account for other non market activities, such as the lease value of private property possession.[8]

Family Economic Theory

The concept of family life as an interchange between individual family members is reframed by the theory of family economics. Negotiation and rational decision-making are explored in relation to marriage, divorce, and household decisions. This theory provides a vocabulary and a variety of models to characterise interactions between market and family spheres as well as interactions inside families. We will now concentrate on the new theory's structure and make note of how it's ideas relate to legal and policy issues. Specifically, four factors are significant.

1. Household chores considered as Production

According to the home production theory, time and other resources are used as inputs to produce a variety of goods, from children and shelter to leisure and love. According to the notion, the family's resources are used wisely in order to optimize each member's overall utility or level of happiness.[9] The husband and wife can maximise the value of their time to produce a better overall production for the household since they each specialise in complimentary activities.[10]

2. Human Capital

[7] MARILYN WARING, IF WOMEN COUNTED: A NEW FEMINIST ECONOMICS 35-40 (Harpercollins, 1990).

[8] ETERSON, DISCUSSING ECONOMIC TREATMENT OF HIDDEN OR ILLEGAL ECONOMIC ACTIVITY,74-75.

[9] Theodore W. Schultz, ECONOMICS OF THE FAMILY: MARRIAGE, CHILDREN AND HUMAN CAPITAL (Univ. Chicago Press, 1974).

[10] Javier Cerrato, *Gender Inequality in Household Chores and Work-Family Conflict*, FRONTIERS IN PSYCHOLOGY (Feb. 16, 2022, 9:29 PM), https://www.frontiersin.org/articles/10.3389/fpsyg.2018.01330/full.

According to economic theories, as households' labour becomes more specialized, their "human capital" accumulations also become more differentiated over time. The term "human capital" refers to a number of variables that affect people's ability to work.[11] This method has been used by economists to link the value of time spent on household duties to a variety of factors, such as (1) the makeup of the household, (2) the age, education, and wage rates of the husband and wife, (3) the number and ages of children, and even (4) the number of rooms in the home.[12]"

3. Trade and Compassion

The definition of family life as an exchange process is changed by economic examination of family behaviour. However, in this work, economists have started to look into the role of altruism, which is referred to as a distinguishing trait of family economic behaviour. Although altruism makes family exchange models more complex, it does not contradict the idea that behaviour is ultimately self-interested and logical. The allocation of resources within the family is a topic that requires particular consideration of the trade and altruism perspectives.

The legal foundation for comprehending marriage and divorce now includes economic theories of family behaviour. The ideologies of benevolence and exchange have increasingly started to define motherhood as well.

8. RECOMMENDATIONS

Following recommendations could be enforced in order to address the issue as discussed in the study:

1. Education is an important instrument for bringing about constructive change. Women with greater education have an edge over others and are well equipped to cater to the needs of their families and the financial situation, have more decisive options, and manage their homes better. Education of girl children should be promoted to a larger scale by the Indian government.
2. Instead of promoting gender stereotypes, the school curriculum should be changed to emphasise gender equality.

[11] Gary S. Becker, NOBEL LECTURE: THE ECONOMIC WAY OF LOOKING AT BEHAVIOUR, 385, 392-93 (J. POL. ECON.,1993).
[12] Reuben Gronau, HOME PRODUCTION-A FORGOTTE INDUSTRY, 408(REV. ECON. STAT.,1980).

3. In order to raise women's self-confidence and improve their status in their household and society, their unpaid efforts should be fully recognised.
4. Greater access and control over resources is required, for example: access to technical skills, communication skills, work ethics, employment, entrepreneurship and so on.
5. Women's equal representation and participation in various policy making decisions should be encouraged.
6. The minimum wage assigned to the workers should be such that it ensures a decent human life and avoids falling into poverty. Companies should be required to contribute to nationalised systems of education, health care, and pensions in order to reinvest some of their profits in the workforce.
7. Affordable and sufficient day-care, as well as family-friendly job rules, should be ensured so that parents may balance caring for their children and working.
8. It is necessary to build a system which not only benefits women but also recognises their work, efforts, and responsibilities in the society.
9. To ensure that women break the shackles of deep-rooted patriarchy in our society, it is crucial that they become financially independent. Additionally, various gender-related biases in employment should also be addressed.
10. It is crucial to provide equal access to various resources like agricultural land, fisheries etc to women through strategies.

9. CONCLUSION

The worth of unpaid household work performed by Indian women in various cities, towns, and villages is projected to be around 39,960,000 trillion rupees, according to this study. Irrespective of the significance of this number, the economical or monetary worth of women's unpaid household labour goes underappreciated, and women continue to be perceived as having no merit or benefit to the wider community and the country.

According to the findings of this study, Women in our country are unwilling to amend their views and beliefs toward themselves as these beliefs are thoroughly ingrained in our society. Women's roles, as well as their psyches and will to dominate in a predominantly patriarchal society, would have to evolve. However, the acceptance of gender roles and constructions and

the retention of conventional gender norms, is difficult to reform. Many people in Indian culture, as elsewhere, are averse to change because they see it as a challenge to male power.

Women are thought to oversee the house and the household, and the concept of women wages equal to, or more than men is not welcomed much by the society, regardless of cultural, caste-based, religious, social, or other inequities. Women's economic reliance on men is damaging to many women, but it is especially devastating to widows and wives of abusive partnerships, who have no stable and safe assistance from male acquaintances.

The misconception that women majorly have a minor role in society, relying on men's hard labour while contributing little of value, undoubtedly contributes to women's undervaluation and subsequent abuse. It is hard to elevate women's status without simultaneously heaving up their discerned worth because almost all women perform very consequential tasks like care, cooking, laundry, while spending a large portion of their time into such day-to-day chores. The importance of these tasks, as well as the valuable contribution of those who perform them without the hope or expectation of financial reward, must be emphasised.

Women's unpaid labour should be appreciated inside their homes as well as outside their households in order to enhance their working circumstances and efficient policy implementation. If the value of unpaid housework is recognised and addressed, the changes in the government policy like well-being and welfare might be properly assessed.

Consequently, rewarding unpaid labour should be done with the purpose of providing access to various social benefits to women in addition to improving and escalating women's full participation in policymaking. A benefit system that recognises women's varied societal obligations, recognises housewives as employees, and offers enough aid to families and children should be implemented. Concurrently, based on various international policies and structure, the government should establish social and pro-family policies to help women get a cushioned seat in the workforce.

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DEFENSIVE MEDICINE AND MEDICAL MALPRACTICES IN INDIA: AN ECONOMIC ANALYSIS

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ABSTRACT

Medical science claims to have developed several ways of controlling health risks, increasing safety standards and protocols related to medical practices and procedures but it cannot claim that it has eliminated all other kinds of risks associated with it. The recent spurt in the litigation against medical professionals for medical negligence and the claim for redressal or compensation has shaken the confidentiality and patient-doctor relationship to a new high level. The increasing cost of medical malpractice litigation has increased the practice of defensive medicine. It is a medical practice that can be said as an act of economic security against potential allegations of negligence. The present study on economic analysis of medical malpractices and practice of defensive medicine focuses on a pre-existing market relationship between medical negligence and the resultant defensive practices adversely affecting many aspects of human life. The present research is divided into five sections.

The first section deals with the nature of the existing market and the economic analysis of the relationship between medical negligence liability and its potential impact on the practice of defensive medicine. The aforesaid market relationship is much more pronounced in the western countries. It is based on the understanding of cost of litigation, the expectation of liability in excess to actual damages and the benefits accruing out of practicing defensive medicine in response to the above situation. However, in the context of India the relationship is not that simple. Particularly, when medical malpractice litigations are not very common practice by the victims and the so-called existing healthcare industry is already running at kickbacks for referring patients, inflating bills and thereby promoting defensive medical practices. In order to promote efficient transactions, exchanges and economic efficiency in the above market, role of legal means cannot be denied.

The second part of the study examines the role of the insurance industry in dealing with medical claims. In an inefficient insurance market, insured medical claims remain low and out-of-

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pocket medical expenditure remains very high. This unethical socio-economic malpractice is economically inefficient and thereby inducing loss of socio-economic welfare of the people.

The third section delves upon the unintended socio-economic impacts of the medical malpractices and defensive practice. Particularly in a welfare state like India, it neither results in an activity reinforcing excellence in the medical profession nor helps in achieving the constitutional mandate of 'Right to Health'. An individual's sense of wellbeing is incomplete in the absence of his physical as well as mental wellbeing and both of them are responsible for country's economic and social development.

The fourth part examines the relationship of law with defensive medicine. The role of law in regulating the market and thereby reducing healthcare costs is very important. Although it is very difficult to have correct estimates of medical liability costs and various components of it, the growing concerns related to increasing practice of defensive medicine has to be adequately addressed by law.

The fifth and the last section discusses the conclusions and recommendations. Today, when the entire world is going through a phase of health crisis, the concerted effort of citizens and government becomes indispensable. In a country like India accessibility and affordability of medical facilities and insurance has to be ensured. With the continuous increase in health care costs the very objective of fair distribution of available healthcare facilities has become a difficult and unachievable task. In order to deal with the above complex and perplexing problem we need greater involvement of economics, law and suitable public policies. India's fragmented health infrastructure may result in economic inefficiency, reduction in social and economic welfare, wastage of scarce medical resources and high-cost treatment.

1. INTRODUCTION

The government of India became the signatory of the Alma Ata Declaration at the World Health Assembly, in the year 1978, promising "Health for All" by 2000. The declaration was in response to existing widespread inequities in health and healthcare facilities across the world.[1]

[1] World Health Organization, *From Alma- Ata to the year 2000: Reflections at the Midpoint*. (Sep. 21, 2022, 11:24 PM) https://apps.who.int/iris/bitstream/handle/10665/39323/9241561246_eng.pdf?sequence=1&isAllowed=y

The signatory countries were expected to bring the radical changes in both content and design of the healthcare services and to fulfil the very fundamental objective of WHO- 'Health for All' by the Year 2000.[2] Pursuant to the above declaration, the government of India allowed the private sector to venture in healthcare infrastructure. However, back then there were not adequate laws to regulate private clinical establishments.[3] Central government through the implementation of the Clinical Establishments (Registration and Regulation) Act, 2010 attempts to regulate all clinical establishments in India. Although public health, hospitals and dispensaries are part of the State List under Seventh Schedule of the Constitution, unfortunately many states haven't ratified and implemented this law.[4]The abovementioned Act has to be accepted by the states under Article 252 of the Constitution but so far, only 11 states (Sikkim, Mizoram, Arunachal Pradesh, Himachal Pradesh, Uttar Pradesh, Bihar, Jharkhand, Rajasthan, Uttarakhand, Assam and Haryana) and all union territories except Delhi have accepted it.[5]

As far as right to medical care is concerned, the 1948 Universal Declaration of Human Rights has already recognized the inherent dignity, and the 'equal and inalienable rights of all members of the human family.'[6] The rights of patients are also based on the very concept of fundamental dignity and equality of all human beings.[7]

2. ECONOMICS BEHIND DEFENSIVE MEDICINE AND MEDICAL NEGLIGENCE LITIGATION

Today, the doctor-patient relationship has undergone a major change and is no longer based on the proverb 'doctor knows the best'. Suspicion and distrust have overtaken this relationship and it is now purely based on a market relationship where individual consumers (patients) are availing services from the doctors and hospitals are working as service providers. What is more interesting is that in this market, demand can be easily influenced and encouraged by the service providers resulting in inefficient outcomes.[8] These inefficient outcomes are because of over treatment or under treatment when compared to economically optimum levels of spending done

[2] *Id.*
[3] Vidya Krishnan, *A Cure for Medical Malpractice*, The Hindu, May 26, 2018. (Oct. 11, 2022) https://www.thehindu.com/opinion/op-ed/a-cure-for-medical-malpractice/article23994053.ece
[4] *Id.*
[5] PTI, *11 states, all UTs except Delhi have adopted Clinical Establishment Act*, ETHealthworld.com (December 28, 2018) https://health.economictimes.indiatimes.com/news/policy/11-states-all-uts-except-delhi-have-adopted-clinical-establishment-act-government/67287028
[6] Tapas Kumar Koley, MEDICAL NEGLIGENCE AND THE LAW IN INDIA, 9 (Oxford University Press, New Delhi 2010).
[7] H.J.J. Leenen, Patients' Rights, 49 *World Health*, 5, 4 – 5 (1996). World Health Organization.
[8] Economic Survey of India 2020-21. (Oct. 15, 2022) https://www.indiabudget.gov.in/budget2021-22/economicsurvey/doc/vol1chapter/echap05_vol1.pdf

by the individuals.[9] This has resulted typically in patients filing negligence suits against doctors and the medical professionals practicing defensively. In the context of India, the market relationship is not that simple, particularly, when medical malpractice litigations are not very commonly undertaken by the victims and the so-called existing healthcare industry is already running at the kickbacks for referring patients, inflating bills and thereby promoting defensive medical practices. Defensive medicine is considered to be an act of commission or omission, permitted by medical science, intended to avoid negligence suits and compensation claims.[10] However, in common parlance it can be well understood as a practice of adopting a procedure which does not benefit patients, but acts as a protection against the possibility of negligence.[11] It is legally safe, economically expensive but medically of least or no value measure adopted by the medical professionals.

There are two concepts related to defensive medicine namely: (a) positive defensive medicine and (b) negative defensive medicine. While positive defensive medicine is more related to assurance behaviour, negative defensive medicine is an act of avoidance behaviour.[12] Positive defensive medicine results in wastage of financial and medical resources and also unnecessarily exposes patients to the risk of several kinds of medical interventions (unreasonable CT scans, X-rays, diagnostics procedures, frequent laboratory investigations, consultations etc.).[13] According to one of the studies, negative defensive medicines can best be perceived as an attempt to avoid the serious patients, the risky invasive procedures involved in treatment and most importantly evade any kind of legal risk or malpractice lawsuits.[14]

Whether it is medical negligence or defensive medicine, they always impose substantial economic costs on either doctor or patient. Theoretically, in a liability system it is noticed that medical practitioners always face trade-offs between socially-optimal amount of care and the inconvenience caused due to medical negligence.[15] Their choice of taking optimum amount of care largely depends upon certain economic observations.

[9] *Id.*
[10] Tapas Kumar Koley, *supra* note 6.
[11] *Id.* at 9.
[12] *Id.*at 9.
[13] D Studdert et al, *Defensive Medicine among High-Risk Specialist Physicians in a Volatile Malpractice Environment*, 293 JAMA (21) 2609, 2616 (2005).
[14] *Id.* at 2616.
[15] Daniel P. Kessler & Daniel L. Rubinfeld, *Empirical Study of the Civil Justice system* (National Bureau of Economic Research, Working Paper No. 10825, 2004), https://www.nber.org/system/files/working_papers/w10825/w10825.pdf

a) The economic cost of practicing medicine will include the cost of precaution plus cost of negligence;

b) High market price of negligence may create incentives for higher level of precaution resulting in defensive medicine;

c) Higher the transaction cost and information asymmetries regarding filing of medical negligence cases, lesser will be the incentive for taking appropriate precautions and care;

d) Information asymmetry exists in the healthcare insurance market which results in higher premium, restricted services on the premium resulting dissatisfaction amongst the buyer;

e) Inadequate government expenditure on public health care infrastructure forces majority of the individuals to seek expensive medical treatment in the private sector.

In a country like India where medical negligence cases are addressed mainly through the consumer courts under the Consumer Protection Act, 2019,[16] services provided by medical practitioners are subject to the same level of analysis and understanding as any other service provider. Therefore, at present when there is a spurt in defensive medicine practices, increase in medical negligence cases, rising insurance premiums and increasing cost of treatment, injustice and dissatisfaction will perpetuate among the patients.

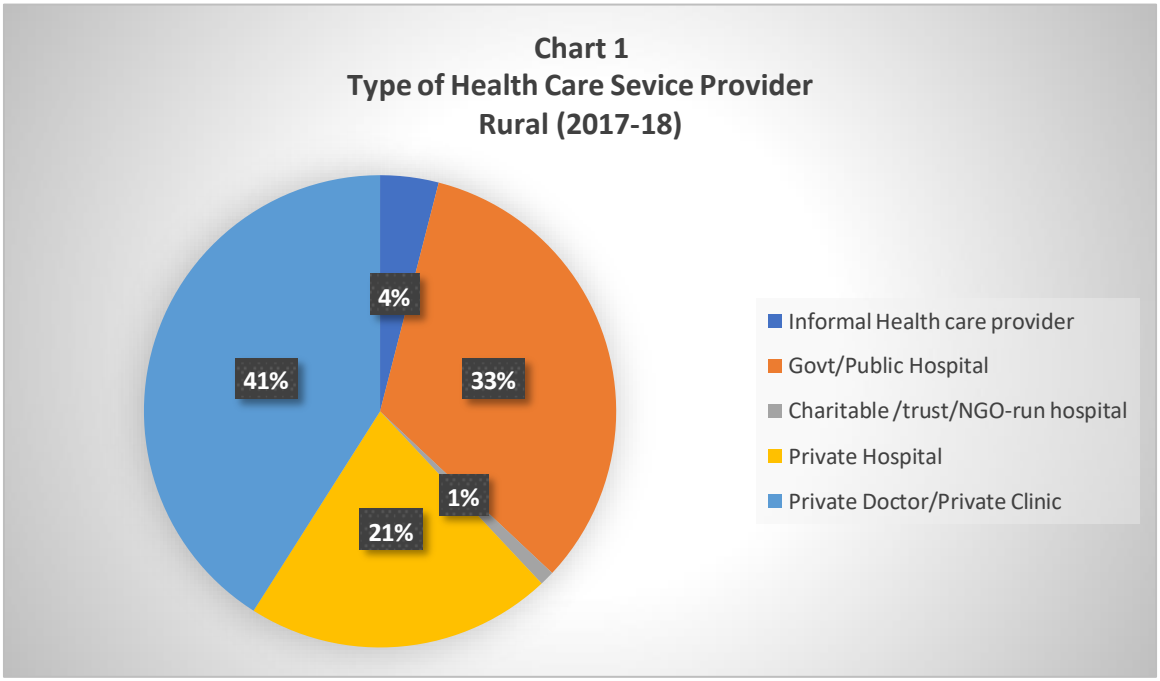
The economic consequences of such a paradoxical and complex situation get worse when there is inadequate investment in health infrastructure by the government. A survey conducted by the National Statistical Office, on household social consumption related to health and type of health care service providers in urban as well as rural areas, confirms that maximum share of ailments are treated by private doctors and private clinics.[17]

The charts below clearly manifest that in rural as well as in urban areas, private sector plays the leading role in providing health care services to the individuals. Approximately, 80% of India's healthcare requirement is met by the private sector which is slowly translating into

[16] S.V. Joga Rao, *Medical Negligence Liability under the Consumer Protection Act: A Review of Judicial Perspective*, 25 INDIAN J UROL. 361, 369 (2009). (Oct. 6, 2022, 12:04 PM)https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2779962/

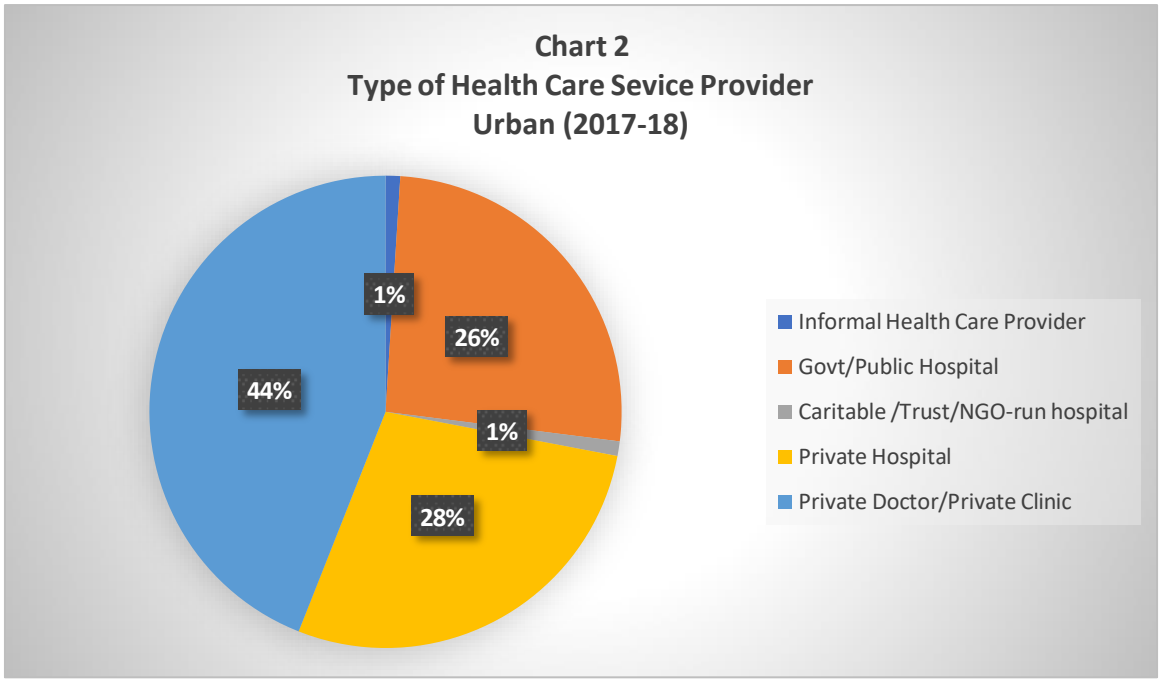
[17] Ministry of Health and Family welfare (Government of India), *Health and Family Welfare Statistics in India 2019-20,* pg 130https://main.mohfw.gov.in/sites/default/files/HealthandFamilyWelfarestatisticsinIndia201920.pdf (Dec. 19, 2022, 12:30 PM)

increasing cost of medical benefits and thus needs to be regulated strictly.[18] A quick look on the chart provided below can justify the statement.



Source: Health and Family Welfare Statistics in India 2019-20[19]

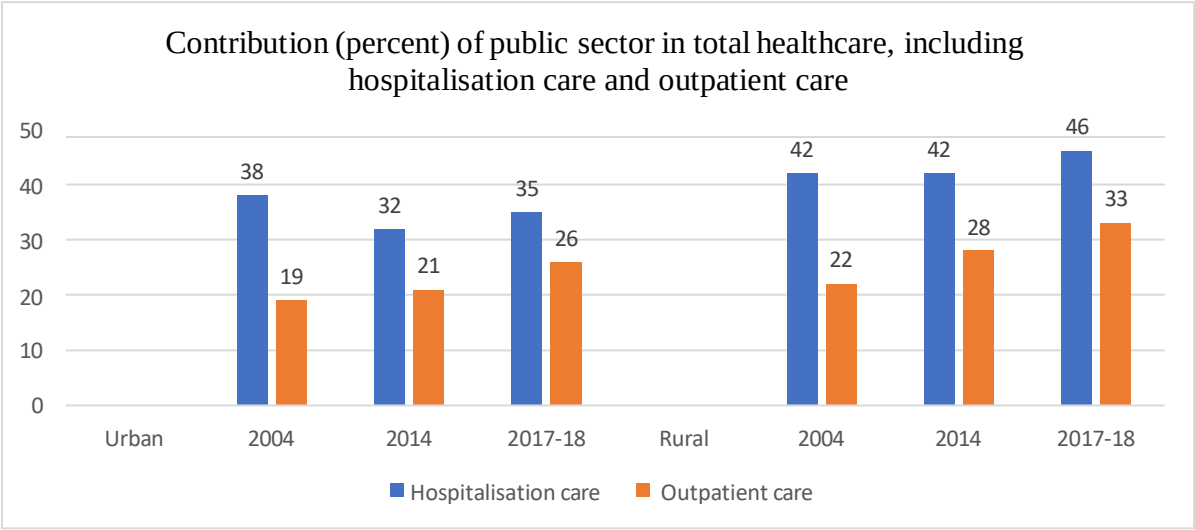
[18] Meghana S. Chandra & Suresh Bada Math, *Progress In Medicine: Compensation And Medical Negligence In India: Does The System Need A Quick Fix Or An Overhaul?* 19 ANN INDIAN ACAD. NEUROL., 21, 22 (2016).
[19]Health and Family Welfare Statistics in India 2019-20. https://main.mohfw.gov.in/sites/default/files/HealthandFamilyWelfarestatisticsinIndia201920.pdf



Source: Health and Family Welfare Statistics in India 2019-20

The chart below shows contribution of the public sector in total health care services including hospitalization and outpatient care.

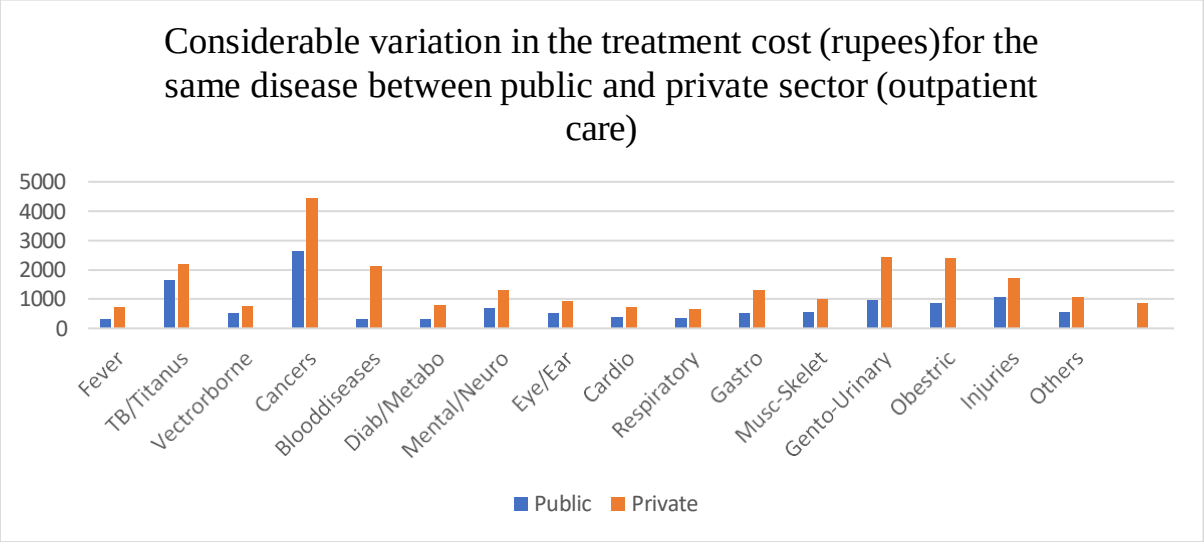
Figure 1



Source: NSSO, various rounds.

As per the Economic Survey of India, the existence of unregulated health care market coupled with asymmetric information has caused market failures causing sub-optimal output, as shown below with the help of the table given below:

Figure 2



Source: Economic Survey of India, 2021

Regulation of private medical care sector becomes more important when the government of India has to ensure universal access to healthcare.[20] With the existing gap between the urban and rural healthcare facilities, private and public healthcare services, the government needs to overhaul the healthcare system before it is too late. The existing asymmetric information in the healthcare structure results in 'high-cost treatment' in the private sector, although there may not be much difference in the 'quality of treatment' in the private sector in comparison with the public sector.[21]

Practically, it is impossible to have an accurate measurement of the extent of economic cost of defensive medicine in India. Also, it is very difficult to establish which aspect of the malpractice system in India has actually driven the majority of medical professionals to practice defensively. In a survey carried out by NLSIU, Bengaluru, it was found that the recent surge in the medical litigation in India is because of increased consumer awareness, flexible consumer forums, cost involved in medical services and increasing litigant mindset among the public.[22] In addition to this, it is also observed that with the rising cost of healthcare amenities,

[20] Paschim Bhanga Khet Mazdoor Samiti v. State of West Bengal AIR (1996).(Improper citation)

[21] The Economic Survey of India 2020-21, (Oct. 15, 2022, 10:15 PM) https://www.indiabudget.gov.in/budget2021-22/economicsurvey/doc/vol1chapter/echap05_vol1.pdf

[22] Health news, *Medical Litigation Cases go up by 400, Show Stats*, The Economic Times, (Dec 6, 2015). https://health.economictimes.indiatimes.com/news/industry/medical-litigation-cases-go-up-by-400-show-stats/50062328

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the general expectations from medical institutions are also increasing.[23] While, the possible positive outcome of the above situation has resulted in increasing accountability of medical practitioners and medical institutions, well documentation of care provided to the patients in order to avoid adverse outcomes, the likely negative effects are that the fear of huge liability or large compensation, increase in frivolous complaints and medical negligence cases, rising procedural costs has adversely affected the confidence of the medical fraternity.

What is more important today is how the present situation in India will unfold in the forthcoming years. If India replicates the western model in this regard, where medical negligence cases against medical practitioners cast substantial economic cost, then there is an urgent need of intervention by the government, because it will adversely affect majority of the poor population. Therefore, in the absence of proper monitoring there can be negative economic outcomes like:

a) Though medical profession will be more accountable but it will be highly discriminatory in treatment;

b) Doctors overprescribing and over treating patients through positive defensive medicines, thereby unnecessarily increasing the cost of treatment;

c) Due to negative defensive medicine, inelastic emergency demand of the patients will not be addressed;

d) Quality of services and products are uncertain and of lower level in an unregulated healthcare market;

e) There will be loss of consumer faith and negative externalities like higher costs and lesser efficient or economically optimal outcomes.

Therefore, before the present healthcare crisis transforms itself into a major economic and social crisis, the government must step in and intervene in the existing market to bring socially desirable and economically optimum outcomes. Particularly during the existing pandemic, the country is in dire need of higher healthcare investments and related health infrastructure to contain the problem.

[23] *Id.*

3. ROLE OF INSURANCE MARKET AND MEDICAL CLAIMS IN PROMOTING DEFENSIVE MEDICINE

Today, the healthcare sector in India has entered into the phase of transition because of increasing income, increase in living standard and mass awareness amongst the educated class. In fact, the role of the private sector in increasing healthcare facilities cannot be negated at this juncture. Unfortunately, in the field of insurance India has shown very little progress and development. Especially, in case of inelastic emergency healthcare demand, pooling of resources for the purpose of treatment becomes uncertain and highly irregular. In this regard, a well-planned and developed insurance market can play a vital role and can reduce healthcare risk at the macroeconomic level.[24] However, in a country like India, little inclination towards health insurance results in a hefty out-of-pocket spending by the majority of uninsured patients.[25] This has caused higher cost of treatment with no guarantee of quality.

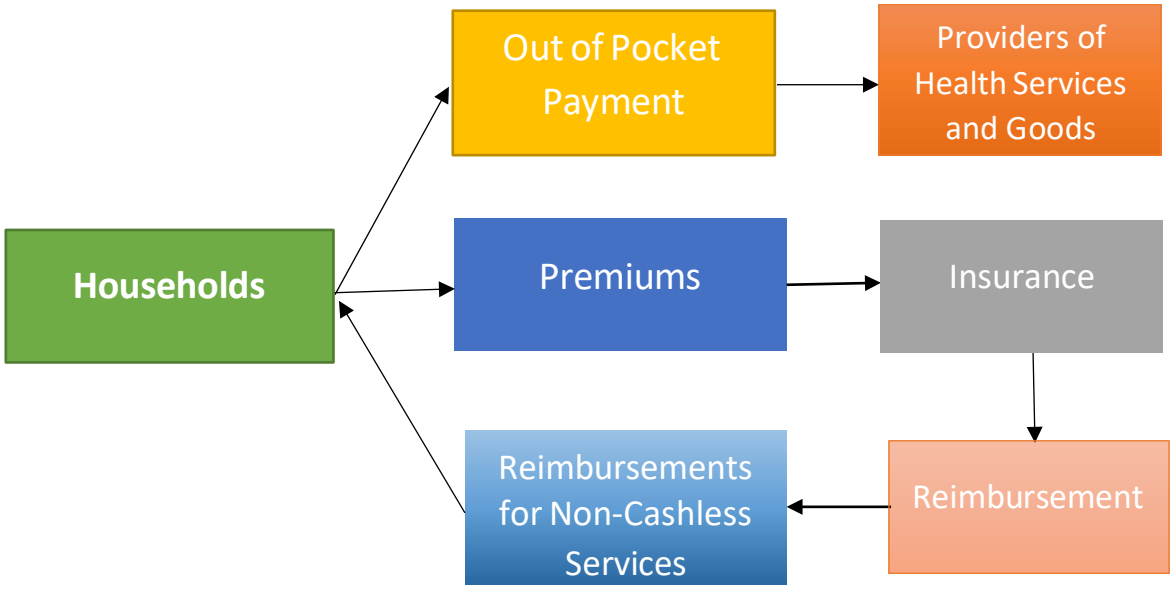


Figure 3: Flow of household health expenditure

[24] The Economic Survey of India 2020-21, *supra* note 21.
[25] *Id.*

The flow chart given above explains how fund is flowing directly and indirectly from households to service providers.[26] Generally Out of Pocket Expenditure ('OOPE') includes expenditure met on inpatient care, outpatient care, immunization, drugs, diagnostics and other medical therapeutic appliances etc. purchased from health care institutions.[27] In fact, OOPE which is an expenditure made by households while getting health services, indicates the extent of financial protection accessible to households towards healthcare payments.[28] A quick glance of the data in the table given below can easily enable us to compare household health and OOPE:

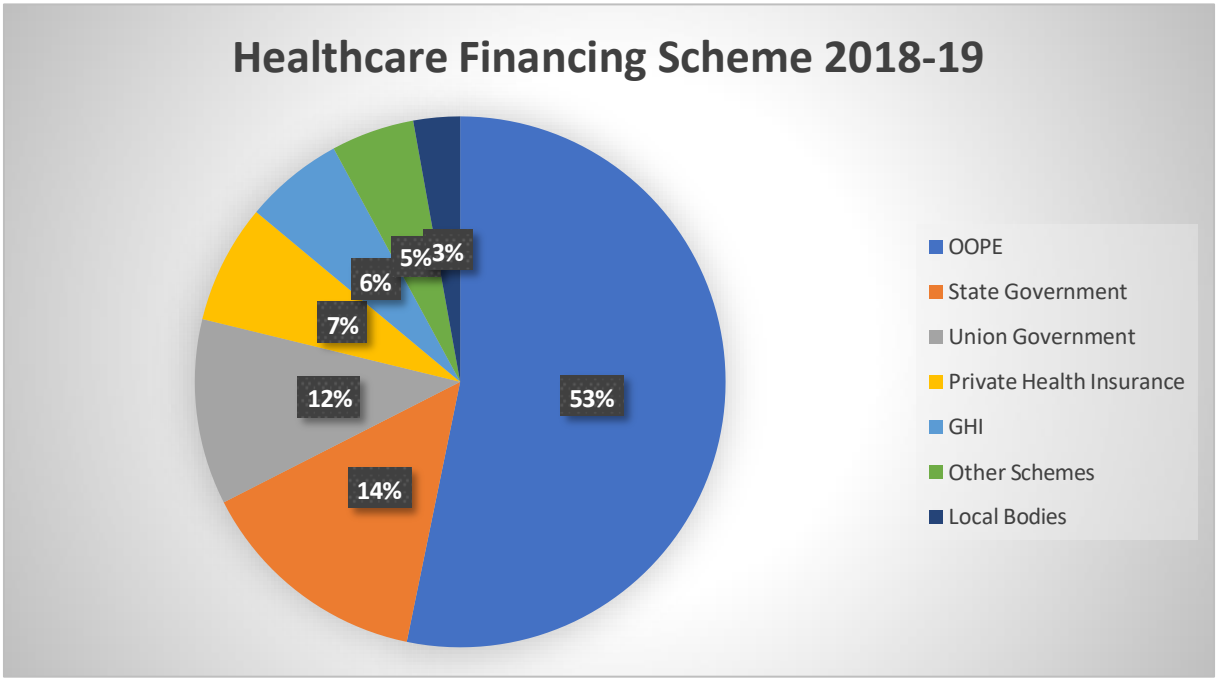
Table 1

Household Health and Out of Pocket Expenditure (OOPE)			
	Indicator	**NHA 2018-19**	**NHA 2017-18**
1.	Household Health Expenditure (incl. Insurance contributions) as % of Total Health Expenditure (THE)	54.4	54.3
2.	OOPE as % of THE	48.2	48.8
3.	OOPE as % of GDP	1.52	1.62
4.	Per capita OOPE (Rs.)	2,155	2,097

Source: National Health Accounts Estimates for India, 2018-19

Figure 4

[26] Providers of service includes sub centres (HSC)/ASHA (Accredited Social Health Activist)/ANM (Auxiliary Midwifery)/ Anganwadi Workers/Private Doctors/Primary Health Centre/Dispensary/Community Health Centre/Private Hospital/Public Hospitals/NGO's etc.
[27] National Health Accounts Technical Secretariat, Household Health Expenditure in India (2013-14), 2 (December 2016). https://main.mohfw.gov.in/sites/default/files/38300411751489562625.pdf
[28] National Health Accounts Technical Secretariat, National Health Accounts Estimates for India (2018-19), 6 (2022).



Source: National Health Accounts Estimates for India, 2018-19

NITI Aayog, recently in its report on *"Health Insurance for India's Middle Missing"* in 2021 has emphasized that it is primarily poor government expenditure on health that has constrained and adversely affected the healthcare services in the public sector and therefore has caused majority of the individuals to seek expensive medical treatment in the private sector.[29] In fact, the report concludes that approximately 40 crore people (30% of the population) called the 'missing middle' are devoid of any financial protection for health by the government.[30] Under such circumstances, it is easier to conclude, the 'missing middle' remains uninsured.

Even if insurance schemes are available, they are not designed for the above-mentioned class. In fact, whatever insurance schemes are available they are at least two to three times higher than the affordable rate for the 'missing middle' and are usually designed to suit high income groups.[31] It is pertinent to mention here that NITI Aayog's report highlights the significance of health insurance as a potential pathway in refining and improving the quality as well as efficiency of health care services in India.[32] Even after various health insurance schemes like government subsidized health insurance schemes predominantly targeting poor and informal

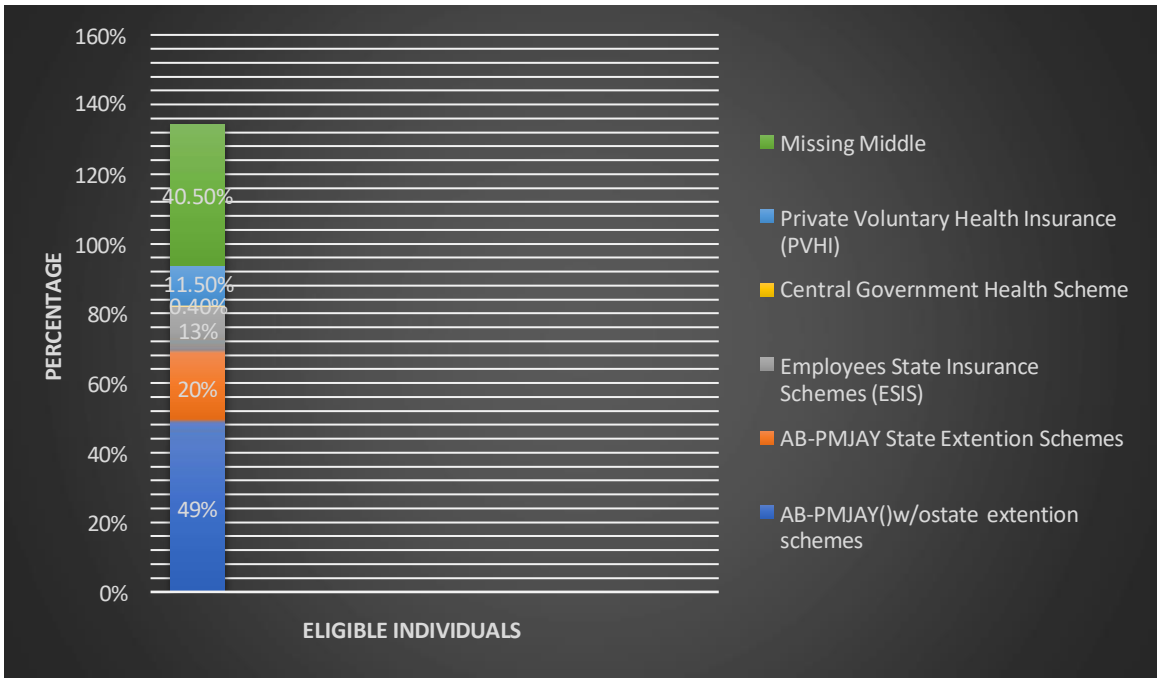
[29] Kumar Anurag, and Sarwal Rakesh. 2021 *Health Insurance for India's Missing Middle,* NITI Aayog (2021) https://www.niti.gov.in/sites/default/files/2021-10/HealthInsurance-forIndiasMissingMiddle_28-10-2021.pdf (Dec. 19, 2022, 12:45PM)
[30] *Id.*
[31] *Id* at 2.
[32] *Id* at 3.

sector, Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), other compulsory and contributory health insurance schemes for organized sector like Employees State Insurance Scheme (ESIS) run by state government, Central Government Health Scheme (CGHS) run by the union government for its employees, Private Voluntary Health Insurance scheme (PVHI) as a contributory voluntary scheme targeting private businesses, individuals and families, estimates suggest that nearly 50 % of the population still does not have health insurance.[33]

Interestingly, for the segment of population which can afford private health insurance scheme, product price plays very important role in the uptake of voluntary contributory health insurance. Furthermore, lack of consumer awareness of the health insurance benefits and the availability of related product can limit its uptake. Moreover, it is also observed that the existence of 'moral hazards' can induce an insured individual to take less effort in maintaining his health.

Figure 5

[33] Estimates based on NSSO's 75th round survey indicate this section may be larger than 30% of the population. Even after adjusting for PMJAY (since the survey was done prior to PMJAY), estimates based on the survey suggest that nearly 50% of the population does not have health insurance. https://www.niti.gov.in/sites/default/files/2021-10/HealthInsurance-forIndiasMissingMiddle_28-10-2021.pdf (Dec. 20, 2022, 1:30 PM)



Source: NITI Aayog, 2021

The practice of defensive medicine is much operated or controlled by the moral hazards of health insurance where neither the medical professionals nor the patients bear most of the costs of medical care because it is financed through health insurance.[34] Kenneth J. Arrow, an American neoclassical Nobel laureate economist in his research, found that the buyers in healthcare markets are hardly aware of the value of the information related to the product until and unless they purchase it. In most of the cases these buyers are not even in the position to evaluate them. The information asymmetry affects the prices of the insurance products.[35] Also, individuals always underestimate the potential health risks and therefore, the demand for health insurance gets adversely affected.

At present, the practice of defensive medicine is somehow resulting in a collusive oligopolistic market between insurance companies and corporate hospitals. The existing market of doctors, hospitals, nursing homes, diagnostic centers, and other medical services at different levels are trying to maximize their gains by creating mutually supportive and reinforcing links.[36] Such a collusive form of market may definitely make the entry of new firms very difficult. In fact,

[34] Daniel P. Kessler & Daniel L. Rubinfeld, *Empirical Study of the Civil Justice system* (National Bureau of Economic Research, Working Paper No. 10825, 2004), https://www.nber.org/system/files/working_papers/w10825/w10825.pdf.

[35] K Arrow, *Uncertainty and the welfare Economics of Medical Care*, 53 AMERICAN ECONOMIC REVIEW, 1963, 941-973.

[36] Niti Aayog, *Healthcare in India-vision 2020: Issues and Prospects*, (Oct. 11, 2022, 10:40 AM) https://niti.gov.in/planningcommission.gov.in/docs/reports/genrep/bkpap2020/26_bg2020.pdf.

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private health insurance sector constitutes less than 10% of the market size of the health insurance sector.[37] Recently, it was observed that a surge in claims arising due to COVID-19 pandemic has resulted in insurers colluding into strategic partnership with the established firms to offer COVID-19 insurance plans to the customers.[38] Niti Aayog, in its recent report has revealed that the opening of the general insurance sector to foreign companies will be beneficial for the healthcare sector in India majorly in the following ways:

a) Insurance business will widen and expand covering more health risks

b) Business will focus more on urban middle and upper class and employed people capable of buying good insurance products for their families.

c) Expansion in insurance market and their clientele, extensive use of hospital services and other medical healthcare products and services will be promoted

However, there will be some adverse and unintended economic consequences also:

a) In the absence of 'set norms' for the optimal use of more technologically intensive interventions, excess of diagnostic equipment uses and hospitalisations, the practice of defensive medicine will multiply manifold.

b) The degree of inequity in healthcare sector may intensify affecting majority of the underprivileged income groups

c) Health disparity will widen due to market distortions, and asymmetric information existing in the insurance market.

The equity in access to insurance services will depend much upon how the public sector and government is ensuring and promoting it. Government will have to lead and continue providing minimum services, while correcting the market failures existing in the insurance market. In

[37] NITI Aayog, Investment Opportunities in India's Healthcare Sector https://www.niti.gov.in/sites/default/files/2021-03/InvestmentOpportunities_HealthcareSector_0.pdf (Dec 20, 2022 1:21 PM).
[38] *Id.*

order to be socially relevant and desirable and also commercially viable, insurance products and services must aim to cover various income groups and the majority of social classes.[39]

4. UNINTENDED SOCIO-ECONOMIC CONSEQUENCES OF DEFENSIVE MEDICINE PRACTICES

The practice of defensive medicine is a kind of economic exploitation with no medical significance. There are serious unintended socio-economic consequences of such prevalent activities across the globe. Though, the awareness of patients' rights coupled with pro-patient legislation and judicial approach in addressing the issues or grievances may to certain extent increase medical negligence cases against medical practitioners but at the same time it has increased the practice of defensive medicine manifold. To have an accurate and correct estimate of how much defensive medicine costs in India is very difficult. However, from the estimates placed by the Centers for Medicare and Medicaid Services in the US shows that in the year 2009, annual defensive medicine costs were somewhere around $ 650-$850 billion.[40] It also estimated that the total healthcare spending was to the tune of $2.5 trillion, signifying thereby that almost $1 out of every $4 was spent on unnecessary tests and treatment asked by medical professionals.[41]

The economic costs of positive and negative defensive medicines are very obvious. Positive defensive medicine may cause unnecessary hospitalization, surgeries, over prescription of drugs, several laboratory tests resulting in not only high economic costs, but also unnecessary exposure to patients to several kinds of health hazards. The superfluous and expensive treatments are always economically favourable to the practitioners and are much widespread in case of surgery, obstetrics and gynecology.[42] Several studies have confirmed that there exists a negative relationship between malpractices done by the medical professionals and the healthcare access by lower socio-economic income groups.[43]The relatively low access to

[39] *Id.*

[40] Jackson Healthcare, *A costly defense: physicians sound off on the high price of defensive medicine in the US.*" Jackson Healthcare (2010). (Oct. 12, 2022, 11:12 AM). https://truecostofhealthcare.org/wp-content/uploads/2015/02/defensivemedicine_ebook_final.pdf.

[41] *Id.*

[42] L. Dubay, R. Kaesther., & T. waidmann, *The Impact of Malpractice Fears on Cesarean Section Rates*, 18(4) JOURNAL OF HEALTH ECONOMICS., 491-522 (1999).

[43] *Id.*

healthcare facilities by them may adversely affect economic welfare and social environment of the country.

This complex, misleading and unethical medical practice is heading towards professional corruption and is causing a serious health care crisis in the country. The economic interests behind defensive medicine are far above the benefits gained by the patients. Particularly in a welfare state like India, it neither results in an activity reinforcing excellence in the medical profession nor helps in achieving the constitutional mandate of 'Right to Health'. An individual's sense of wellbeing is incomplete in the absence of his physical as well as mental wellbeing. It is in this regard that a country's healthy population can determine economic and social development. However, the extent of socio-economic disparities widens if the access, quality and the costs of healthcare facilities differ among different income groups. In case of India, Niti Aayog's report on Healthcare India vision 2020, confirms that private OOPE dominates the cost of financing healthcare causing regressive effects.[44] 'Health care facilities' should therefore be recognised as a public good and the market should not be left to be synchronised and adjusted as per changing demand conditions.[45]

For a fair and just healthcare system, universal and adequate healthcare access without excessive financial burden is a must. It also requires that there should be fair distribution of burden and benefits in terms of financial cost for access and rationing of healthcare with special attention to weaker, vulnerable groups (women and children), especially disabled and old age people.[46] Due to the existence of large unregulated corporate hospitals and medical clinics, defensive practice and cases of medical negligence have increased manifold. Now, a million-dollar question arises whether we need doctors who can apply reasonable skills or doctors applying the highest degree of skills? There is a very narrow division between mistaken diagnosis and negligent behaviour.[47] Usually medical practitioners indulge into the practice of high-cost care and defensive medicine to cover their risk of malpractice suits.

5. Relation of Law and Defensive Medicine: A Searching Critique

Defensive medicine practice has come to be recognised as a universal problem. The practice of prescribing excessive diagnostic tests, medicines and providing unnecessary treatments with

[44] Niti Aayog, *supra* note 36.
[45] *Id.*
[46] *Id.*
[47] *Id.*

the sole objective of reducing the risk of liability for medical negligence prevails throughout the country.

Originally, for their culpable negligence the medical professionals were held liable on the basis of the general principles of liability under the law of torts or crime. The law of medical negligence had developed as a part of the law of tort as a result of the judicial pronouncement in several cases over a period of time. After the enactment of the Consumer Protection Act, the controversy arose about bringing the medical professional's liability for negligence under the purview of this newly enacted Act.

In *Indian Medical Association* v. *V.P. Shantha*,[48] It was argued on behalf of the medical profession that bringing the medical practitioners under the purview of the Consumer Protection Act, 1986 would result in huge surge in medical expenditure due to *inter alia* tremendous increase in defensive medicine. The Supreme Court held that it was not possible to entertain this apprehension. The Court observed that by holding the medical practitioners fall within the purview of the Act, no change is brought about in the substantive law governing claims for compensation on the ground of negligence.

In *Arun Kumar Manglik* v. *Chirayu Health and Medicare (P) Ltd*,[49] the Supreme Court held:

> "*...while adopting a course of treatment, the medical professional must ensure that it is not unreasonable. The threshold to prove unreasonableness is set with due regard to the risks associated with medical treatment and the conditions under which medical professionals function. This is to avoid a situation where doctors resort to "defensive medicine" to avoid claims of negligence, often to the detriment of the patient.* "

Even in the absence of any empirical studies, one can argue that there exists a causal relation between increasing litigations alleging medical negligence and practice of defensive medicine by the medical professionals. From the point of view of economic analysis, it is significant to decide whether the medical professionals have a right to exercise defensive medicine or whether the patients should be given this right not to be subjected to the exercise of defensive

[48] Indian Medical Association v. V.P. Shantha, (1995) 6 SCC 651.
[49] Arun Kumar Manglik v. Chirayu Health and Medicare (P) Ltd, (2019) 7 SCC 401.

medicine. If we decide this question in favour of the medical professionals, then the medical professionals get an entitlement and with an incentive to shun any liability arising out of a possible medical negligence litigation, the medical professionals will always be tempted to exercise this right. Moreover, due to the inelasticity of the emergency medical services, the patients who could afford the increased medical expenditures will undergo the prescribed course of diagnosis, tests, treatments and over prescription whether they actually need to undergo or not, and irrespective of their wish and desire. However, from the economic point of view, in a great majority of the cases it would be regarded as allocatively inefficient. In the whole transaction, in the great majority of the cases, neither the medical professionals are benefitted nor the patients would derive any good or benefit out of the whole exercise and the social wealth is simply wasted. On the Paretian model also it would not be regarded as an efficient allocation in all those cases where the position of the patients have not improved as they had not benefited from the defensive medicine practices.

Further, this would also adversely affect economically poor people, as due to the over prescription of the medical tests and medicines, the new equilibrium price for the specific health services, in the wake of a surge in demand due to the large-scale defensive medicine practices, would be pushed beyond the purchasing power of many poor. This would be worse, if the sector remains unregulated. The situation will be further aggravated due to lesser number of government hospitals and poor expenditure on health sector. The exorbitant and inconsistent billing for the ordinary and simple facilities during the Covid pandemic is a glaring example of unaffordability that may result into a given situation albeit at a lower scale. Vis-a-vis the Kaldor-Hicks criterion as well, the medical professionals would not benefit in any substantial way and would not be able to choose to compensate the patients.

The only perceived benefit is the psychological satisfaction that the medical professionals would derive on account of lesser possibility of him being held liable for any alleged negligence, since he had prescribed every course of diagnosis, tests, medical internment and prescription that was possible at that time. The liability rule that is applied in case of negligence simply required the medical professionals to take care that was due in the particular case.

A pertinent question to be considered in this regard is about the leading cause of medical malpractices claims. It is obvious that medical diagnostic errors are one of the principal causes of medical malpractice claims. But, if they are not the sole cause, and the resources put to use in defensive medicine practice is disproportionate to the risk of liability for medical negligence,

the whole transaction is allocatively inefficient. Viewed from the perspective of amedical professional, it is obvious that if the tests, procedures, surgeries and medicines prescribed were completely unnecessary. They would not reduce the chance of adverse clinical events. In such a case, the eventual medical errors would expose the particular doctor or professional to the same or higher risk of liability for medical negligence to which he would have been liable even if he had not indulged in the said defensive practice. Looked at from the perspective of the patients, it is obvious that his wealth has just been wasted on a completely unnecessary course of treatment resulting in no gain or benefit. The psychic benefit that a medical professional seems to derive may be fragile and temporary, as victim of the eventual medical error wields a firm motive to sue the doctor. The point is that greater use of resources in the defensive medical practice does not necessarily improve the clinical outcome. The clinical outcome can be improved only by skillful treatment and observance of standard due care.

6. CONCLUSIONS AND RECOMMENDATIONS

It is mostly observed that health system of a country is largely regulated by the political, social and economic setup of a country. Just like there cannot be a universal political, economic and social system, there cannot be a universal health system. It is much determined by the existing political, social and economic realities of the state. Today, when the entire world is going through a phase of health crisis, the concerted effort of citizens and government becomes indispensable. Increasing awareness amongst the public and their legal rights related to law can definitely bring positive changes in healthcare facilities and the medical profession.

In a country like India accessibility and affordability of medical facilities and insurance has to be ensured. With continuous increase in health care costs the very objective of fair distribution of available healthcare facilities has become a difficult and an unachievable task. It's high time, particularly during this pandemic, that the government and the legislators intervene timely in allocation of healthcare facilities.

Furthermore, such intervention should guarantee accessibility of healthcare facilities and services to each citizen across the nation. There is no denial that such measures require greater involvement of economics, law and suitable public policies. Today, we need minimum standards and accountability of private healthcare services consisting of self-regulation and government regulation with external accreditation agencies.

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It is always important to have laws guaranteeing patients' rights but it is more important to regulate the healthcare system of a country and seriously implement those laws. In order to restrict the scope of medical negligence, a clearly codified and quantified law is indispensable.[50] However, it cannot be guaranteed that cases of medical malpractice and, thereby induced defensive medicine practice can be stopped altogether. Technically speaking, it can be reduced to a substantial level or tolerable limit if there is a reduction in number of patients (India needs to work on improving sanitation, hygiene, adequate and food requirements at lower income level) and pressure on medical professionals to examine and investigate their disease without delay.

The mounting pressure and quick disposal of cases has also resulted in prescription of unnecessary tests and over medication causing medical negligence.[51] Contrary to this, we also need to understand that criminalising medical malpractices, punitive actions against erring medical professionals may not bring economically and socially efficient outcomes. Rather concerted efforts from government, patients, and medical professionals are required in order to have a safer and better healthcare system in India.

Last but not the least, we can say that in the world of complex economic and social setup, it is very difficult to decide what is just, right and good for the patients and doctors. To deal with such a perplexing and complex situation, the best way is to respect each other's rights while be equally aware of responsibilities. A healthy doctor-patient relationship can always result into economically efficient outcomes and may even help in preventing frivolous lawsuits, reducing various kinds of economic wastage. As rightly cited in the Economic Survey of India 2021,

> *"... most well-functioning health systems are structured as oligopolies purchasing from oligopsonies instead of individual consumers purchasing from individual providers."*[52]

The above market structure, if not regulated, may cast long term negative implications on the progress of the health care system in the economy. At this juncture one has to understand that the fragmented health infrastructure may result in economic inefficiency, reduction in social

[50] Preetam Kaushik, *Medical Profession Losing Its Aura of Sanctity with the Rising Cases of Malpractice and Negligence*, Business Insider India, (March 25, 2015). https://www.businessinsider.in/medical-profession-losing-its-aura-of-sanctity-with-the-rising-cases-of-malpractice-and-negligence/articleshow/46688610.cms

[51] Sandro Vento, Francesca Cainelli and Alfredo Vallone, *Defensive Medicine: It Is Time To Finally Slow Down An Epidemic*, 6(11) WORLD J CLIN CASES, 406-409 (2018). (Oct 13, 2022, 11:40 AM) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6163143/.

[52] The Economic Survey of India 2020-21, *supra* note 21.

and economic welfare, wastage of scarce medical resources and high-cost treatment. The need of the hour is that the government should realise these harsh realities and accept reformation and amendments to the existing laws. The rationale behind such steps should essentially result in greater availability of medical care at much affordable and lower cost to the majority of the underprivileged people. Increasing awareness amongst the public and proper enforcement of their legal rights can definitely bring positive changes in healthcare facilities and the medical profession.

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WELFARE IMPACT ANALYSIS OF MENSTRUAL HYGIENE POLICY THROUGH EMPIRICAL STUDY IN PUNJAB

-Jyoti Jindal[1]

ABSTRACT

This paper outlays a study of 144 women, done in Ludhiana district of Punjab, wherein information has been obtained through objective as well as open-ended questions. These women belong to low income families and menstrual hygiene is not a priority for them due to their lack of awareness of the consequences of poor menstrual hygiene and prevalent taboos preventing them from openly discussing their problems. A large proportion of women still use old rags and unhygienic cloth during menstruation. None of the women interviewed was aware of any ongoing government scheme for menstruating women, which implies that government needs to strongly advertise these schemes. The pads supplied in such schemes are regular-sized and do not cover the needs of all women, thereby leading to leakages and discouraging them from using pads altogether. Schools only teach the girls about menstruation which perpetuates a culture of hiding it from the male population and fails to teach boys that it being a biological phenomenon needs to be respected and not ridiculed. Female attendants at government pharmacies are therefore necessary to encourage women to buy pads and also, these pharmacies can be used for spreading salubrious information. This paper further deploys three different methods to conduct an economic analysis as to why the government scheme is not efficient enough, and what steps can be taken to address this problem.

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1. INTRODUCTION

Dr. BR Ambedkar said that *"I measure the progress of a community by the degree of progress the women have achieved"*. Menstruation is a biological phenomenon, which every woman goes through monthly and which adversely affects the mental and physical well-being of half of the population of our country. Poor menstrual hygiene results in a plethora of fungal & bacterial infections of the reproductive and the urinary tract. In fact, 70% of the Reproductive Tract Infections (RTI's) in women are caused due to poor menstrual hygiene.[2] Not only this, 1/3rd of the global cases of cervical cancer are in India, the major cause of which is poor menstrual hygiene.[3] 10% of Indian girls believe Menstruation to be a disease since it affects their health adversely.[4] Periods are still considered to be 'unclean' in the Indian society, and over the years we have not been able to eradicate this presumption. [5] There are incidents in India wherein girls are stripped naked to check if they are menstruating,[6] to ensure that they do not enter temple or kitchen premises during their menstrual period[7], places where they are isolated in 'period huts'[8], they are deemed to be religiously impure and their involvement in daily activities deemed impure[9], this has resulted in large-scale neglect of their health conditions and there are increasing reports of women resorting to hysterectomy in specific areas.[10] Despite their being scientific evidence with regard to the consequential harm of poor

[2] The United States Agency for International Development & The Kiawah Trust, *Spot On! Improving Menstrual Management in India* (2018).
[3] K. Kaarthigeyan, *Cervical cancer in India and HPV vaccination*, 33 INDIAN J. MED. PAEDIATR. ONCOL. 7–12 (2012).
[4] Ministry of Education, Bhutan and UNICEF Bhutan, *Menstrual Hygiene Management of adolescent school girls and nuns in Bhutan 2018*, (2018) https://www.unicef.org/bhutan/media/211/file/Menstrual%20Hygiene%20Management%20Report%202018.pdf
[5] R. Kaur, K. Kaur, and R. Kaur, *Menstrual Hygiene, Management, and Waste Disposal: Practices and Challenges Faced by Girls/Women of Developing Countries*, J. ENVIRON. PUBLIC HEALTH (2018).
[6] Geeta Pandey, "*Period-shaming" Indian college forces students to strip to underwear,* BBC NEWS (Feb. 16, 2020) https://www.bbc.com/news/world-asia-india-51504992.
[7] *India school's "menstruation check" investigated,* BBC NEWS (Mar. 31, 2017) https://www.bbc.com/news/world-asia-india-39452245.
[8] Barkha Mathur, *Where women are banished to a 'period hut' with no power or loo*, TIMES OF INDIA, (Nov. 27, 2018) https://timesofindia.indiatimes.com/city/nagpur/where-women-are-banished-to-a-period-hut-with-no-power-or-loo/articleshow/66834713.cms.
[9] *Menstruating women cooking food will be reborn dogs': Hindu religious leader,* HINDUSTAN TIMES, (Feb. 18, 2020) https://www.hindustantimes.com/india-news/menstruating-women-cooking-food-will-be-reborn-as-dogs-swami-narayan-sect-member/story-c9M4Ozcl0oilsYFEV4DfzN.html.
[10] Jyoti Shelar, *A harvest of crushed hopes: Why number of hysterectomies are high in Maharashtra's Beed district,* THE HINDU (Aug. 10, 2019) https://www.thehindu.com/news/national/other-states/in-beed-a-harvest-of-crushed-hopes/article28969404.ece.

menstrual hygiene, most women in low and lower-middle income countries use old rags for blood absorption.[11] As per 2012, the estimated number of women using disposable napkins is only 10-11%.[12] It is however disheartening to note that we have made very little progress from there.

Anurag Chauhan, the *pad-man* of India, once said that 'menstruation is not the problem; poor menstrual hygiene is. Poor Menstrual Hygiene is a problem, as big as polio'. While India successfully eradicated polio by deploying an army of healthcare workers making door-to-door visits and vaccination camps in high risk areas,[13] Menstrual practices are yet to meet a hygienic companion to disassociate the potential discomfort and diseases, alongside the existing taboos which accompany menstruation.

Media, government and people all over the country have tried to ward off these taboos, but every grassroot survey we conduct shows us that there are problems still intact and milestones yet to be achieved. This paper is an attempt to analyse the problem of menstruation in one district of Punjab, reflecting in bits and pieces as to how it affects India as a whole. It shall further run an economic analysis of the scheme by scrutinising the gap in policy-making, its potential for long-term benefits and gauging the extent of welfare provided by the scheme. The paper shall finally propose possible solutions to solve the problem.

2. THE STUDY: AIMS AND METHODOLOGY

Research shows lack of awareness about **Jan Aushadhi Centres** ("**JAC's**") and generic medicines amongst people due to the paucity in number of doctors prescribing it and lack of advertisement about the same has been conducted[14].

[11] K. Seymour, *Bangladesh: Tackling Menstrual Hygiene Taboos,* UNICEF, (2008).
[12] A. Sebastian, V. Hoffmann, & S. Adelman, *Menstrual management in low-income countries: needs and trends*, 32 WATERLINES, 135–153 (2013).
[13] Esha Chhabra, *The End of Polio in India*, STANFORD SOCIAL INNOVATION REVIEW (2012) https://ssir.org/articles/entry/the_end_of_polio_in_india.
[14] Vijay Thawani, Abin Mani, and Neeraj Upmanyu, *Why the Jan Aushadhi Scheme Has Lost Its Steam in India?*, 8 J. PHARMACOL PHARMACOTHER, 134–136 (2017).

This study attempts to analyse the knowledge of women about JAC's along with their awareness about **Jan Aushadhi Suvidha Oxo-Biodegradable Sanitary Napkins**[15] by asking a set of questions to women and looking at possible solutions to the problems highlighted.

The primary objective of this study is to find answers to the following questions:

i. The usage of sanitary napkins amongst these women;
ii. their awareness of 'Jan Aushadhi Suvidha Oxo-Biodegradable Sanitary Napkins' (Ministry of Chemicals and Fertilizers, 2019); and
iii. the prevalent practice of maintaining Menstrual Hygiene and problems faced by women.

Further, an attempt at creating awareness amongst the women was also made by the volunteers.

3. STUDY AREA OF SAMPLING

The study was conducted on 26th February 2021 in a park of a colony on pretext of distributing free goods wherein the real purpose of the camp was not conveyed (it is hereby noted that women would not have come if they knew what the camp was about and the free substance being distributed was sanitary napkins. The same was felt during the evening hours when women refused to come since the word had already spread about sanitary napkins being distributed) and that menstrual hygiene practices were explained to women of low-income class. The posters for the camp were put up and the information about the same was being spread from 2 weeks' prior on every social media platform as well as through verbal communication between housewives and housemaids. The camp was conducted all day from morning 10:00 a.m. to evening 8:00 p.m. with 3 attendants present full-time. Verbal consent was obtained and the name, age, residence, present menstrual product being used, menstrual hygiene practices opted by them, problems faced during their period, along with their awareness of the existing government scheme was noted.

Personal information revealing the identity of the subjects has been removed from the dataset and is only kept as record with the principal investigator. A total of 144 women visited the camp at different timings throughout the day. The age of the women varied from 13 to 60 years.

[15] (missing)

Most of the women worked as domestic help or were involved in other low-paying jobs. 40% of the women were from *Sunet*[16] and others were from adjoining areas falling under the same pin code. Both objective as well as open-ended questions were asked. In-depth interviews were also conducted to gauge the gravity of the situation.

4. TOOLS AND TECHNIQUES OF DATA COLLECTION

Given the multitude of factors responsible for a varied response amongst different age groups and for facilitating a comprehensive understanding of underlying reasons distinctly, women are classified into six age groups for the purpose of this study. (Table 1)

Group number	Age groups	Number of women studied	Percentage of total data set (approx.)
1.	13-16 years	20	13.8
2.	17- 20 years	21	14.5
3.	21- 30 years	35	24.3
4.	31- 40 years	43	29.8
5.	41-50 years	16	11.1
6.	51-65 years	8	5.5
	Total	144	100

Table 1: Classification of women into different age groups

[16] PINCODE / POST OFFICE LOCATOR TOOL, https://pincode.net.in/sunet-rajguru-nagar-ludhiana-east-punjab-141012. (last visited Jul. 16, 2021).

5. RESULTS

The findings are based on interviews conducted and questions asked. An analysis of the objective questions has been presented in Table-2; and Table-3 contains the salient points particular to each group, followed by some incidents that happened during the study.

Basis	G1 (13-17yrs)	G2 (17-20ys)	G3 (21-30yrs)	G4 (31-40yrs)	G5 (41-50yrs)	G6 (51yrs+)	Overall
Awareness of Consequences of poor Menstrual Hygiene	None	None	None	None	None	None	None
Awareness of govt scheme*	None	None	None	None	None	None	None
Awareness of JACs**	None	None	Few	Few	None	None	Very Few
Using cloth	3	5	18	14	6	6	
	15.7%	23.8%	51.4%	32.5%	37.5%	37.5%	33%
Using pad	16	16	17	29	10	N.A.	
	84.2%	76.1%	48.1%	67.4%	62.5%	--	67.66%
Total	19	21	35	41	16		

Table 2: Group-wise summary-analysis of all the objective questions asked

* The Govt. scheme is the Jan Aushadhi Suvidha Oxy-biodegradable Sanitary Napkin scheme.

** Jan Aushadhi Centres are referred to as JAC's.

While most of them were aware of the pads available in the market, they found them to be 'too costly'. They also stated that the regular-sized pads which were the cheapest in the market, were not useful as they resulted into leakages. Women with heavy flow said that they had bad experience using pads for the first time, and the bigger pads were more expensive.

They all felt embarrassed sharing it with the opposite gender or talking to them about it. Not entering kitchen or temples during menstruation is still prevalent. Most women while suffering from menstrual cramps, do not know how to share it with the male members of the family. Some women, mostly between the age group of 13-20 years, said that they were too shy to purchase pads from male attendants at pharmacies. When 'Jan Aushadhi Centres' were mentioned, they inquired whether the attendant was a male or female. Many women could link menstruation to child-birth, while they did not exactly know why they bled every month. Menstrual Hygiene was not a priority for these women as they were not aware of the consequences of poor menstrual hygiene or the resultant diseases, many also did not keep a track of their period and used pads as well as cloth interchangeably. Most of them were not habitual to using pads. None was aware of 'tampons' or 'menstrual cup' as a menstrual product. Most women who wear pads, do not change them for long intervals, often wearing the same pad all day. Among those using cloth, some said that they used 2 pieces of cloth during the day, changing it after half-a-day had passed and throwing off the used cloth; while some also remarked that they used the same cloth for the full duration of their menses, washing it only at night.

Group no.	Salient features
Group 1 (13-16 yrs.)	➢ **Maximum percentage** of women using pads in this age group, primarily because of education and govt schools supplying free sanitary pads.[17]("Punjab Government", 2021) ➢ Girls were unaware about menstruation before menarche.

[17] *Punjab government announces free sanitary pads for girls in high schools and colleges,* INDIA TODAY (Jan. 8, 2021) https://www.indiatoday.in/education-today/news/story/punjab-government-announces-free-sanitary-pads-for-girls-in-high-schools-and-colleges-1757009-2021-01-08.

	➢ Two girls received sanitary napkins alongside their salaries from their employer. ➢ It was also noted as a general trend that each girl this age greeted us with a sheepish grin owing to the secrecy associated with the subject in question
Group-2 (17-20 yrs.)	Roughly 10% of the girls stated that they used cloth and pad interchangeably, whatever they had at the moment.
Group-3 (21-30 yrs.)	This group had the **least percentage** of women using pads and maximum were using cloth. Many used cloth and pads interchangeably.
Group-4 (31-40 yrs.)	Women usually came with their **peers**. They also tried to copy their answers. The reasons for copying can be 'embarrassment' for not using pads and still using cloth; or fear that they might not receive a free sample and therefore, should do as others are doing.
Group-5 (41-50 yrs.)	While some mothers said that their daughters had started using pads, they themselves did not use them. They looked at it as an avoidable expense and using it to be a luxury which could be forfeited.
Group-6 (51-60 yrs.)	➢ Smallest sample, therefore, least representation. ➢ Most women had reached menopause.

Table-3: Specific characteristics of each age-group

6. DISCUSSION

Periods are colloquially known as "*mahina",* (meaning 'month'), because they occur every month. Very few were aware about Jan Aushadhi Centres, also colloquially known as "*Modi Dawai Khana*", wherein they could purchase medicines at a lower price; however, none was aware of the scheme regarding low-cost sanitary napkins.

It is important to note that since girls are unaware of menstruation before menarche, [18] they often end up hiding their first period from their parents and get stressed thinking of what has happened to them. This was further reiterated by the study conducted.

There was also an incident where a mother-child duo, both of menstruating age, were handed over packets of pads wrapped in newspaper, but were reluctant to hold it, as though they were given something 'dirty' to hold onto. They kept on passing the pack to each other, for neither of them wanted to hold it. Their main concern was, "*Koi dekh lega to kya jawab denge?"* (What will we say if somebody sees and asks?) The burden of hiding it, considering it to be unclean and the shame associated with periods is still intact in some parts of India, and this was a clear example.

Three girls from the first age-group belonging to belonging to well-off families, said that their mothers had not talked to them about menstruation but it was their peers they had learnt it from. (This data has not been included in the overall sampling) The little knowledge passed onto them by their mothers was to not talk about it publicly and to keep it a secret from boys. It is important to realise that this taboo is being passed on from every mother to daughter to granddaughter to keep it a secret from the opposite gender as it is 'indecent' to talk about it.

A woman, after thoroughly looking at the pad, stated that she will not use it since the pad was too small and would only stain her clothes and bedsheet. She said that while the price was affordable, the pads do not serve the intended purpose.

It was peculiar to note that some women straightaway refused to enter the camp, stating that they knew what it was for, and did not want pads for free since they do not use them. Some of them had never used a pad and were unaware of 'how to use a pad'. When demonstrations were given to explain how simple it was to wear a pad, the women felt highly embarrassed and considered it to be an inappropriate subject to have a camp on. Some women were reluctant to try these pads, as they worked as housemaids every day, and could not afford to have a leakage while they are working in somebody's house. None of them were aware of the consequences of poor menstrual hygiene. They were also not aware of any governmental scheme of ₹1 per pad which could be bought from Jan Aushadhi Centres.

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[18] A. Dasgupta, M. Sarkar, *Menstrual Hygiene: How Hygienic is the Adolescent Girl?,* 33 INDIAN J. COMMUNITY MED. 77, (2008).

A woman from Sunet said, "*I share the area where I reside with 6 more women and none of them uses a sanitary napkin. Pads are very costly and we cannot afford. If you tell everyone about these pads and the consequences of poor menstrual hygiene, they will surely listen to you and follow.*"

A significant number of women admitted to using cloth. One woman said that she used the same cloth for the number of days a single menstrual cycle lasted by washing it once a day, another said that she used the cloth for half the day, and then throws it and uses another one. They also feel that they cannot justify the presence of sanitary pads in their houses as the male members wouldn't understand and they would feel shy. Even today, when women have cramps and menstrual pain, they hide it from the male members of the family. Suffering from menstrual pain, discomfort and not even being able to talk about it, deteriorates the mental as well as the physical condition of women. The Jan Aushadhi Centres that were visited in the locality had full supply of these pads, yet the public was unaware.

7. ECONOMIC ANALYSIS FOR EFFICIENT POLICY

To increase the efficiency of the policy, it is crucial to increase the difference between the total benefits and the total costs.[19] There are various economic and rational methods of analysing the efficiency of a policy. One of which has been laid down by the Office of Management and Budget, U.S. Government[20], and the same method has been sed to try to understand the reasons behind an unsuccessful implementation of the Jan Aushadhi Suvidha Sanitary napkins scheme by the government. This chapter further attempts to explore the possible use of calculating *Marginal Value of Public Funds* ("MVPF") for welfare-impact analysis.

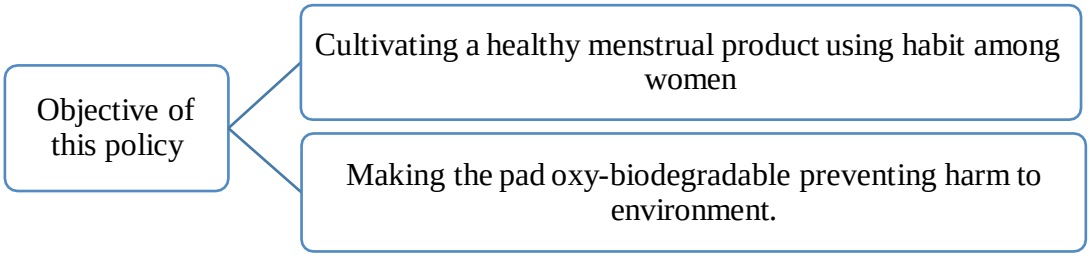
[19] WILLIAM K. BELLINGER, THE ECONOMICS OF PUBLIC POLICY, 151-173 (Routledge 2007).
[20] Office of Management and Budget, *Guidelines and Discount Rates for Benefit–Cost Analysis of Federal Programs, (October 29, 1992*) THE WHITE HOUSE (CIRCULARS) https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A94/a094.pdf

7.1 Understanding the policy rationale and the lacunas

The scheme uses a 4-point criterion for demarcating the cost-efficiency of a policy as presented by the U.S. government. These are:

7.1.1 Policy rationale

The rationale for policy making should consider the possible market failure, and also see as to how it leads to cost-saving investments. In this case, investment in improving the health of women will have a ripple effect on their productivity, thus, boosting the economy by providing a healthier workforce.[21] The objective of this policy was two-fold as given under.



7.1.2 Assumptions Used

The estimated future benefit derived out of the cost depends on the underlying assumptions used for reaching such a conclusion, these may include the number of future beneficiaries, the intensity of service, etc. Further, the strengths and weaknesses of such assumptions should also be analysed.

Identifying the assumptions:

Since the price of the sanitary pad was a dominant factor in preventing women from purchasing it, it was assumed that reducing it to Rs. 1 per pad will incentivise them to buy it. However, they can only buy the product if they know of its existence. It was assumed that the low-income

[21] Yuko Imamura, et. al., *Association of Women's Health Literacy and Work Productivity among Japanese Workers: A Web-based, Nationwide Survey*, 3 JMA, 232-239, (2020).

class women will get to know about the scheme through advertisements and word of mouth, once they know about it, they will purchase and use them.

The fallacy with the assumptions:

The using of cheaper pads by women is contingent on their knowing about it. Television, newspapers or media could not have conveyed the information as it is often the male members of the family who read the newspaper and visit news channels; however, the social taboos often prevent both the genders from talking to each other about it. Therefore, alternative methods should be used so that the information reaches the ears of the targeted audience.

Moreover, the potential harms associated with poor menstrual hygiene, or the benefits that come alongside using a hygienic menstrual product were not conveyed to them, and therefore, even after being informed of the cheap price of the pads, they would not have bought them. This has resulted in none of the women knowing about it, at least in the study sample analysis, and further, no accompanying mechanism for explaining the need for using menstrual products has been undertaken.

There needs to be a further mechanism, which takes place after the commencement of her using these pads as well. This should address her apprehensions and further evaluate the efficiency of the product being supplied. If timely changes to the product and the response of women towards it is not known, it is not possible to know if the scheme is a success or not. Mere distribution of pads is not the way out.

7.1.3 Evaluating Alternatives

While deciding which policy to adopt, alternative means of achieving the objectives by scrutinising the variations which may occur by changing the scale of program, methods of provision or degree of government involvement are also analysed. This may also include upgrading and renovating the existing scheme. In the present case, 'sanitary napkins' were a preferred option as more women prefer sanitary pads in India in comparison to using menstrual cups or tampons and therefore, incentivising their use seemed appropriate. However, it is important to note that sanitary napkins are not entirely safe options if they are not changed within 4-6 hours.[22]

7.1.4 Verification

Ex post facto studies evaluating if the predicted benefits and costs have been attained are extremely useful, therefore, the implementing organisation should devise periodic, results-oriented evaluation of program effectiveness. This will also come in handy when further funding is deviated towards the project or in case of change in amount of funding. However, no such feedback mechanism gathering information with regard to the success of the scheme has been made available in this case.

Mere launching of a policy, without successful implementation and follow-up shall defeat the purpose as then the cost of the policy shall overpower the predicted benefits. Therefore, it is of utmost importance that steps be taken in the right direction to make the policy most efficient.

Conclusively, even if women are made aware of the scheme, as long as they are not educated as to why they need to use the products, they will choose to save their 10 Rupees by not buying 10 pads. To them, the opportunity cost of Rs. 10 can be a packet of biscuits which should not be forfeited for disposal of blood which can be done on cloth rags or newspaper waste which will cost them nothing. This realisation should be there that the best alternative in this choice is not the packet of biscuits, rather a pack of pads as it is her good healthy years of life packed in a pink paper. This realisation can only come when someone interlinks the concept of health

[22] T. Mahajan, *'Imperfect Information in Menstrual Health and the Role of Informed Choice',* 26 INDIAN J. GEND. STUD., 59–78 (2019) (hereinafter MAHAJAN).

and the usage of pads for her, at the same time, interlinking the consequences of poor menstrual hygiene with "free" unhygienic piece of cloth.

Will this policy be beneficial in the long-run or has the potential to fail?

To analyse if such a policy facilitating subsidised pads would prove to be beneficial in the long run, the study done by Abhijit V. Banerjee & Esther Duflo is taken into account. In their reasoning, applying the principles as were laid down for analysing 'whether free bed-nets would have made people habitual to using them, in malaria-prone areas'. Three primary questions were proposed that would have answered the problem.[23] Those questions are therefore, adapted to redress the problem-in-hand, and are:

⇒ First, if women should pay the full price (or at least a significant part of the price) for a pad, will they prefer to go without it?
⇒ Second, if the pads are distributed free of cost or at a subsidised price, will women use them, or will they be wasted?
⇒ Third, after getting the pad at subsidised price once, will women become more or less willing to pay for the next one if the subsidies are lessened in the future?

The study has successfully answered the first question that they deem the pads to be too costly and instead prefer to go without them if they are not provided for free/ subsidised.

The second question is analysed from the perspective of the pads being distributed at Rs. 1 per pad under the current scheme. Here, there is a possibility that women even after being made aware of the scheme do not buy the pads. The reasons for the same are two-pronged:-

A. They do not find them useful as they do not understand the consequences of using unhygienic menstrual products.
B. They are habitual to using cloth and do not want to change it since pads are generally considered to be uncomfortable and they fear leakage.

Therefore, there is a higher chance that Government's investment into making this initiative a success may fail as the underneath problem as to why women are not using pads stays

[23] ABHIJIT V. BANERJEE & ESTHER DUFLO, POOR ECONOMICS, 16-17, (2012).

unaddressed. Therefore, a sincere effort at awareness is required and needs to be given priority for the success of any such scheme. As even though the cost of the product is a major problem, it is not the only problem in hand.

The third question can only be answered if there is a proper mechanism that exists for collecting feedback. Every good policy and even law that has been made needs to change with time. Such changes can only be made if we have enough data to make the correct decision. Therefore, a feedback mechanism to gauge whether the investment put forth in propagating a social cause is yielding the desired result or not has to be checked for.

7.2 Analysing the welfare impact of the policy

This chapter attempts at using 'Marginal Value of Public Funds' to explicate the implicit trade-offs involved in policy-making by measuring the direct and indirect effects (both in terms of cost and benefit) of policy to provide a welfare-impact analysis.

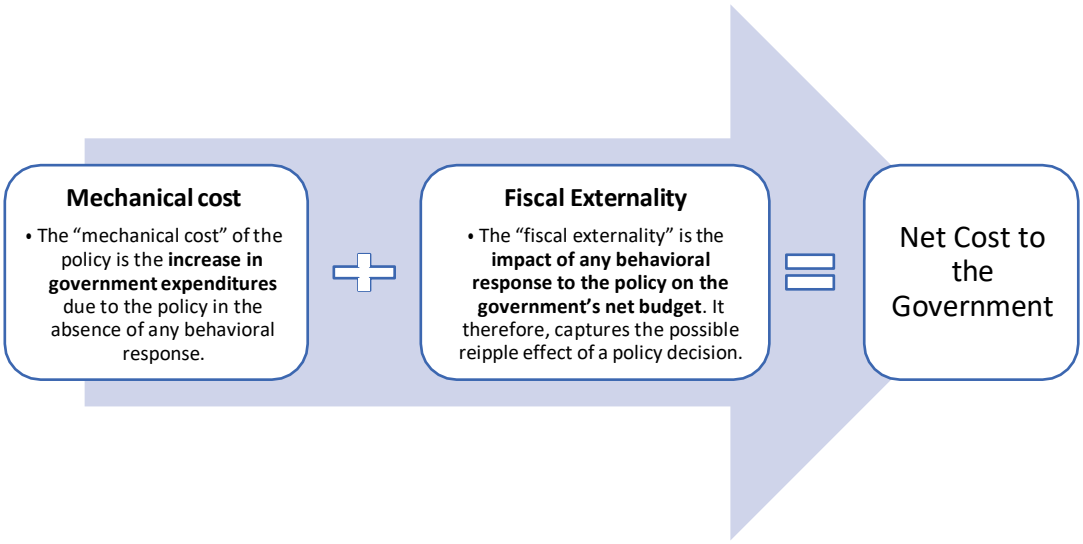
7.2.1 ***Calculating "Marginal Value of Public Funds"***

The MVPF can be defined as the ratio of the marginal benefit of the policy to the marginal cost of the policy, which is inclusive of the impact of any behavioural responses to the policy on the government budget.[24] The marginal benefit of the policy can be more simply understood as the Beneficiaries' Willingness to Pay. It can be denoted as:

$$\text{MVPF} = \frac{\text{Beneficiaries' Willingness to Pay}}{\text{Net Cost to Government}}$$

⇒ Net Cost to the Government: The net cost to the government can be understood as the summation of the mechanical cost and the fiscal externality.

[24] Finkelstein, Amy, and Nathaniel Hendren. "Welfare Analysis Meets Causal Inference." *The Journal of Economic Perspectives* 34, no. 4 (2020): 146–67. https://www.jstor.org/stable/26940894.



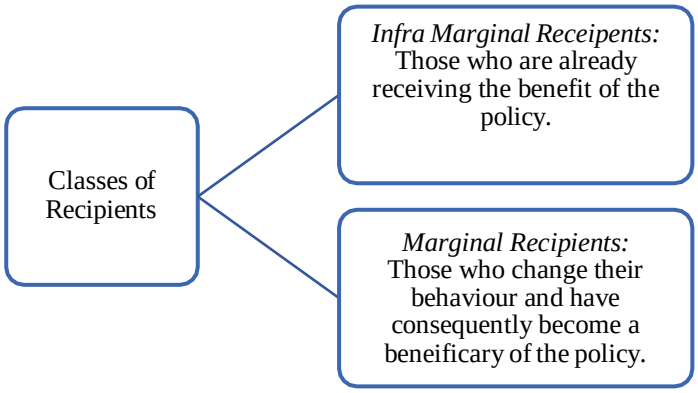
The *Mechanical cost* in this case can be the cost of producing the sanitary napkin, packaging cost, transportation cost to different stores, and advertisement cost incurred to spread awareness. Mechanical Cost can be best understood through the example of cash transfers[25], if ₹1 is to be transferred to a person as cash benefit, then ₹1 is the mechanical cost incurred by the Government.

The *Fiscal Externality* is the behavioural response generated which can potentially increase the net cost incurred by the Government. For instance, in case of cash benefit, let's assume that only labourers working 6 hours daily were eligible for this cash transfer, then, some individuals might increase their working hours to fit into this category, (from working 5 hours daily to 6 hours) while some might reduce their working hours(from 8 hours to 6 hours) for benefitting from this policy. Therefore, in either case, a behavioural response is generated which will impact the budget.

Fiscal externality can be both positive or negative, depending on its effect on the government budget. For instance, a policy may have a positive net effect on the government budget (in this case, through improvement in health and reduction in healthcare expenditure) or a negative net effect on the government budget (through abuse of the subsidised product/ taking the free product but not using it).

[25] *Ibid.*

⇒ Benefits/ Beneficiaries' Willingness to Pay: For the purpose of receiving the welfare, the beneficiaries can be classified into two categories.



In this case, the benefit accrued to the beneficiaries is an *in-kind* transfer. Therefore,

$$\text{MVPF}^{\text{inkind}} = \frac{\text{W}}{(\text{MC} + \text{FE})}$$

(Wherein, W= Beneficiaries' Willingness to Pay; MC= Mechanical Cost of the Transfer, and FE= Fiscal Externality).

For instance, if it were a cash transfer, then as previously discussed, for every ₹1 borne as Mechanical Cost, each infra-marginal recipient would receive a benefit of ₹1 (i.e., MC=W=1).

Conversely, in case of an in-kind transfer, for every Marginal Cost of ₹1 for a product, the benefit obtained ("W") can either be valued less than the marginal cost (i.e., W<1) or more (i.e., W>1). For instance, if the government provides a good at a lower cost than is available in the market, then W>1.

Ideally, in the present case therefore, the benefit should be greater than 1.

*7.2.2 **Application in the instant case***

In the instant case, the transferred good, i.e., the Government-sponsored sanitary napkin is provided at a lower cost than the already available sanitary napkins in the market. Therefore, being a close substitute (in theory), it should have yielded more benefit to the women and in turn, W>1. However, as can be noted above (Sub-chapter 7.1), the scheme did not yield benefits as anticipated. A multitude of factors have been held responsible for this, including, [A.] lack of awareness of the scheme; [B.] Lack of awareness of the consequences of poor menstrual

hygiene; and [C.] Small size & bad quality of the pad. Other factors being the taboo associated with Menstruation. All these factors, contributed in the failure to create a distinct class of consumers targeting the women of low-income class.

The failure of women from higher income groups from becoming a part of this policy can be attributed to the poor quality of the product and the paucity of effort to advertise it. This is primarily why the Government-supplied pad failed to be a close substitute to the pads available in the market, and its demand did not rise when the product was at a significantly cheaper price. Therefore, although the Government-supplied pad had the advantage of being cheaper, trust of the consumers in Government schemes[26], a well-established market and a potential consumer base, yet the demand of the product was skewed.

$\Rightarrow$ Incorporating the external effects of the policy

The policies, although often aimed at a particular set of people, have indirect effects beyond the targeted recipients. For instance, a policy aimed at controlling pollution via BS VI engines, will not only affect those generating pollution, but also those benefiting from the reduced pollution. Similarly, in the present case, a preventive healthcare policy aimed at improving the hygiene of women, will have indirect impact for businesses (healthier workforce); education system (fewer absentees amongst women); healthcare industry (reduced expenditure on cervical cancer patients); etc. Therefore, the MVPF Framework will include these positive external effects as positive fiscal externalities.

The key extension to the MVPF mechanism, as elucidated by Amy Finkelstein and Nathaniel Hendren, is to include these positive external effects to measure the willingness to pay of everyone in the population affected by the policy, including those indirectly affected by it.[27] Therefore, the magnitude of the welfare effect will depend on the summation of both positive and negative fiscal externalities borne by the externally affected population.

[26] Kumar, D., Pratap, B., & Aggarwal, A. (2021). Public trust in state governments in India: Who are more confident and what makes them confident about the government? Asian Journal of Comparative Politics, 6(2), 154–174. https://doi.org/10.1177/2057891119898763.

[27] Finkelstein, Amy, and Nathaniel Hendren. "Welfare Analysis Meets Causal Inference." *The Journal of Economic Perspectives* 34, no. 4 (2020): 146–67. https://www.jstor.org/stable/26940894.

Conclusively, while this mechanism is not all-encompassing, since estimating the welfare impact of a subsidised product like Govt-subsidised pad can be challenging, however, it does go a long way in including substantial objects needed for welfare analysis.

8. THE WAY FORWARD

Studies have shown a direct connection between poor menstrual hygiene and a lower prevalence of reproductive tract infections.[28] Therefore, belonging to the educated strata, it becomes our responsibility to educate others about it. Based on the problems faced by women, the following steps can be taken to ameliorate their situation.

8.1 Creating awareness about Jan Aushadhi Suvidha Oxo-biodegradable sanitary napkin scheme

Since there is sheer lack of awareness amongst the women about the scheme, it calls for a proper mechanism through which such essential awareness can be spread. The Covid-19 pandemic made evident the role that misinformation, or no information can play in exacerbating the health conditions of people.[29] The Covid-19 pandemic showed us that the government is capable of parting authentic information to every nook and cranny of this country. Those channels of parting information thus made, should be utilised for spreading information about this scheme. The government's responsibility is not limited to the launching of a welfare-scheme, but extends to ensuring that its benefits are availed by the targeted population. Further, the local media, shopkeepers, doctors, etc. should all be engaged in the process of spreading the word.

Menstrual Hygiene camps ought to be conducted by students from universities all over the country. The state can direct at least the government universities to take up initiative for spreading awareness on menstrual hygiene. Volunteers from National Service Scheme

[28] B. Torondel et. al., *Association between unhygienic menstrual management practices and prevalence of lower reproductive tract infections: a hospital-based cross-sectional study in Odisha, India,* 18 BMC INFECT. DIS., 1-12 (2018).

[29] *Lessons from the COVID-19 pandemic for tackling the climate crisis,* UNICEF (Aug. 13, 2020), https://www.unicef.org/stories/lessons-covid-19-pandemic-tackling-climate-crisis.

Programme[30] can also be taken to conduct this drive. The Universities and the students which take up such initiative can be given certificates acknowledging their good work which can act as an incentive to take up similar initiatives.

8.2 Jan Aushadhi Centres can play an important role

8.2.1 Awareness initiative

These centres are strategically located and if all these centres put up posters, hold camps and even display the product outside their shops, it will hugely benefit women and spread the word about the scheme. Such posters in and around the shop will attract women, making them aware of such a scheme.

8.2.2 Female attendants

Females often feel embarrassed to buy pads from the male pharmacists. If female attendants are present at Jan Aushadhi Centres, it would encourage more ladies to buy sanitary pads. These female attendants can also educate them regarding Menstrual hygiene practices and the ladies will be able to share their grievances with them. To low-income women visitors especially, the female attendants can talk about the scheme, whereas any word by the male pharmacist can make the woman uncomfortable.

8.2.3 *Jan Aushadhi Sugam*

This mobile application called 'Jan Aushadhi Sugam' which helps people locate the nearest Jan Aushadhi store around them can also be used.[31] Those owning smartphones should be encouraged to guide the underprivileged regarding generic medicines available in these stores along with the sanitary pad scheme. Doctors should be encouraged to educate women visitors about the same.

[30] NATIONAL SERVICE SCHEME, https://nss.gov.in/nss-volunteer, (last visited Dec. 28, 2021).

[31] PRADHAN MANTRI JAN AUSHADHI PARIYOJANA (PMJP), http://janaushadhi.gov.in/pmjy.aspx (last visited Sept. 15, 2021).

8.3 Review of the already existing schemes

The pads which are provided by the government under the Jan Aushadhi Suvidha Oxy-biodegradable scheme are regular-sized pads. If the regular-sized pads catered to the needs of all women, then companies would not have invested so much capital into making different-sized pads either. A one-size-fits-all solution has led to women not using pads at all due to fear of leakage. Most of the studies show that women find most distressing the fact that the blood has leaked onto their clothes.[32]

If women do not use the regular sized pads for fear of leakage and are still forced to use pieces of cloth, then the scheme cannot be considered a success. Therefore, it is important that review studies be conducted so that problems of the product launched and scheme are known to address grievances.

8.4 Making menstrual education gender-neutral

It is rightly said that "*there comes a point where we need to stop just pulling people out of the river, we need to go upstream and find out why they're falling in*." It is our education system which needs to teach menstruation and hygiene to not just girls; but to boys as well. Studies have time and again highlighted the importance of menstrual education for adolescent boys. 33 If boys are educated about the same, they can further the cause and become spreaders of menstrual hygiene for the women in their family.34 A change of attitude for both men and women is the need of the hour.

8.5 Alternatives to using sanitary pads

While India has considered sanitary napkins to be a solution to poor menstrual hygiene practices and period poverty, it is important to note that Menstrual cup is considered to be **a** safe option as well.[35] While sanitary napkins consist of up to 90% plastic and cause problems for waste management worldwide,[36] menstrual cups can be more environment-friendly and

[32] JEN GUNTER, THE VAGINA BIBLE (2019).
[33] M. Gundi & M. A. Subramanyam, *Curious eyes and awkward smiles: Menstruation and adolescent boys in India*, 85 J. ADOLESC., 80-95 (2020).
[34] L. Mason et. al., *'We do not know': a qualitative study exploring boys perceptions of menstruation in India*, 14 REPROD. HEALTH, 1-9 (2017).
[35] Van Eijk et. al., *Menstrual cup use, leakage, acceptability, safety, and availability: a systematic review and meta-analysis*, 4 LANCET PUBLIC HEALTH, e376-e393 (2019).
[36] A. Pachauri, et. al, *Safe and sustainable waste management of self care products*, BR. MED. J, 365 (2019).

cost-saving. While using hygienic cloth can also act as a safe menstrual product, it is important that the hygiene practices be strictly adhered to. Other menstrual products like tampons, reusable pads, reusable menstrual underwear, etc. are also viable alternatives which people are unaware of. Informed choice for women will always help minimise the damage to environment and ensure their health does not degrade.[37]

9. CONCLUSION

This research highlights the existence of a substantial percentage of women who are still using unhygienic cloth during their periods, the existence of widely prevalent taboos beleaguering menstruation and the unawareness of the government sponsored schemes for low-priced sanitary napkins. This research has assumed that the data provided by women subjects is accurate to the best of their knowledge and has attempted to present the ground-level situation of menstrual hygiene amongst women of low-income class. It has further presented suggestive measures for the government as well as those which can be undertaken at individual or community level. It is important that this issue gains priority and women understand that menstrual hygiene is their right, and period poverty should not be able to deprive them of this. At the same time, it is proposed that children be taught these practices in their school at an early age and the root cause of the taboos and lack of education in this arena be rectified. An efficient policy measure that rectifies this issue can go a long way in bettering the state of health of women.

[37] MAHAJAN., *supra note* 20.

IMPLICATIONS OF UNITED STATES STEEL TARIFFS ON INDIAN STEEL IMPORT PATTERNS: A CASE OF INDIA'S PREFERENTIAL TRADE AGREEMENTS AND INTERNATIONAL TRADE LAW

Z. Hussain[1] and A. Illiyan[2]*

ABSTRACT

The study has attempted to analyse the factors responsible for the surge in imports of steel products in India immediately after the implementation of tariffs on steel products by the United States under Section 232 of the Trade Expansion Act of 1962. To identify the factors, the study has mainly utilized Bilateral Revealed Comparative Advantage, Export Intensity Index, and SMART partial equilibrium modelling tool as methodology. The key finding of the study shows that India witnessed a sudden surge in imports post the implementation of these tariffs, specifically from its preferential trade partners. India's preferential trade partners enjoy a significant comparative advantage in steel products and have a very high export intensity in India. These countries were also found to be having very high exports to production ratios. It was also revealed that due to the reduction of import tariffs by India, there will be a significant increase in the imports of steel products, not only due to trade creation but also due to significant trade diversion. The study also looked at the compatibility of these tariffs with the General Agreement on Tariffs and Trade (GATT)/World Trade Organization (WTO) law and WTO rulings on these measures to suggest key trade policy measures that can be adopted by India to counter such situation in future. The study suggested two key policy measures that could be adopted by India in the future to tackle any such measures: one is the Auto-Trigger Safeguard Mechanism (ATSM) & the other is the imposition of Suo Motu safeguard measures on steel products.

Keywords: *Steel Trade, Steel Imports, Protectionist Measures, Partial Equilibrium Analysis*

JEL Codes: *F14, F17, F51, F52*

1. INTRODUCTION

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The global merchandise trade has witnessed a significant rise in protectionist and harmful trade measures that could disproportionately affect the most vulnerable countries (United Nations, 2018; Gunnella & Quaglietti, 2019). As per the World Trade Organization (WTO), the use of tariff measures and non-tariff barriers such as anti-dumping duties, safeguard measures, packaging requirements, sanitary and phytosanitary (SPS) measures, etc. has increased significantly. One such protectionist measure was the imposition of 25 percent tariffs on all steel imports by the United States (US) under Section 232 of the Trade Expansion Act of 1962 in March 2018. This imposition of tariffs by the US led to retaliation by other WTO member countries like the European Union (EU), China, Canada, etc., which also reacted by putting additional tariffs or safeguards on the imports of steel products. These tariffs imposed by the United States specifically on national security considerations have raised many questions on the legality of these measures and the role and sustainability of the WTO & Multilateral Trading System (Malawer, 2019; Arora, 2019).

In the second half of 2018, the tension between US and China rose following an investigation by the US authorities into Chinese intellectual property practices, which led to the initiation of trade action against China under section 301. Although, it is argued that the tariffs imposed by the US are not meant to protect the US domestic market or hurt China, they were imposed to protect the ability of U.S. businesses to make profits abroad or create export opportunities and jobs in high-paying industries (Hanada, 2020). The imposition of tariffs on steel significantly impacted the trade patterns of steel products in different countries, specifically India. According to a report by the United Nations Conference on Trade and Development [UNCTAD] (2019), it was estimated that due to trade tensions between the US and China, the trade of steel products stands to be affected the most.

Before the beginning of these tariff escalations, India, which is currently the second largest steel producer and consumer of crude steel in the world, experienced a continuous surplus balance of trade for around two years for finished steel products before the implementation of tariffs by the US. For the year 2017-18, the country had 2 million tons (Mt) of the surplus balance of trade in steel products. However, immediately after the imposition of US tariffs in April 2018, the balance of trade turned negative as no retaliatory tariffs (safeguard duties) on steel products were imposed by the Indian authorities to check the sudden diversion of trade.

India became a net importer of finished steel for the period April – March 2018-19.

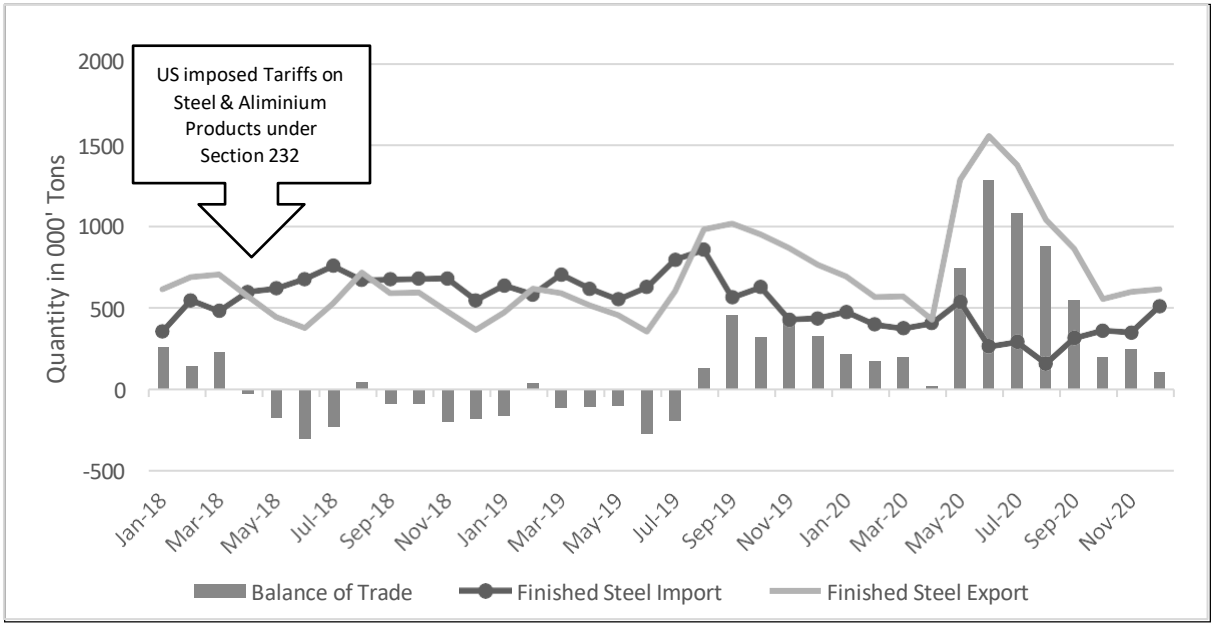

Figure 1: India's Finished Steel Trade with World

Source: Authors calculation based on the data of CMIE Industry Outlook

Due to this combat of tariff escalation traditional steel surplus exporting countries like China, Japan & Korea (CJK) had lost a significant volume of their exports. Consequently, the volumes available with them for exporting to India increased significantly which eventually led to the apparent trade diversion. This trade diversion is also supported by the analysis of data on trends in steel trade. (See table below)

Table 1: Trade Diversion or the Impact of US tariffs (under section 232) on Indian Steel Imports

Major Steel Exporting Countries to India	India's Import (Value in USD Million)					United States Imports (Value in USD Million)				
	Pre US tariffs	Post US tariffs			Quarterly Growth Rates	Pre US tariffs	Post US tariffs			Quarterly Growth Rates
	2018-Q1	2018-Q2	2018-Q3	2018-Q4		2018-Q1	2018-Q2	2018-Q3	2018-Q4	
World	1867	2198	2483	2314	7%	7835	8496	7930	7081	-3%
Korea, Republic of	541	638	684	593	3%	818	716	531	430	-19%

China	398	460	582	528	10%	302	238	221	270	-4%
Japan	276	378	348	311	4%	520	477	410	401	-8%
Viet Nam	50	69	108	125	36%	149	258	224	276	23%
Indonesia	47	54	68	78	18%	51	53	50	47	-3%
Germany	69	53	58	66	-2%	384	484	410	440	5%
Taipei, Chinese	75	48	54	63	-5%	319	327	327	268	-6%
Belgium	31	42	52	49	17%	62	66	87	64	1%
Hong Kong, China	0	14	36	39	382%	0.23	0.18	0.19	0.03	-49%
Sweden	27	25	29	38	13%	148	159	128	107	-10%

Source: Authors Calculation based on the data available at ITC, Trade Maps (UN comtrade data)

Based on the trend analysis, it was found that post-implementation of duties by the United States in March 2018, the imports by India increased from countries that experienced a decline in exports to the United States. A study by Bekkers & Schroeter (2020) highlighted that the trade war between the US and China in 2019 led to a considerable reduction in trade and is accompanied by substantial trade diversion to imports from other regions.

With this background, the idea of the paper is to look at the factors responsible for the sudden rise in steel imports through preferential trade routes into India, specifically before and after the imposition of steel tariffs by the US. The specific objectives of the study are as follows

I. to analyse the export intensity of steel products from selected FTA partners to India, while taking into consideration their surplus export capacity.
II. to analyse the comparative advantage of selected preferential trade partners in India for steel products.
III. to simulate the potential increase in steel imports due to the reduction of import duty by India with a breakup into Trade Creation & Trade Diversion through the FTA route.
IV. to look at the compatibility of the tariffs imposed by the United States under Section 232 with GATT/WTO Law and its recent development in the WTO.

V. to look at the other factors responsible for the surge in imports and to suggest key trade policy measures that are compatible with GATT/WTO law.

2. METHODOLOGY

To analyse the structure and trends of steel production, consumption, exports, and imports in terms of quantity, the data has been sourced from the Joint Plant Committee (JPC) Ministry of Steel / Government of India, the CMIE Industry Outlook, and the World Steel Association. For analysing and calculating selected trade indices, the Partial Equilibrium Model (SMART), and non-tariff barriers, the trade statistics have been extracted from UN COMTRADE statistics, the World Integrated Trade Solutions (WITS) database, and the World Trade Organization database. For the purpose of calculating trade indices and the SMART partial equilibrium modelling tool, the Harmonized System (HS) codes from HS 7206 to HS 7306 were used. The reference period of the study is from 2010 to 2019.

The study has broadly utilized four different methodologies 1) Bilateral revealed comparative advantage index (BRCA) to analyse the relative advantage or disadvantage as evidenced by trade flows. 2) Export Intensity Index (EII) to analyse how intensive the export relationship India has with its key import partner in Steel products 3) To simulate the impact of the reduction in import duty on total trade (trade creation plus trade diversion) through SMART partial equilibrium modelling tool and 4) Analysis of the trade policy measures that could have been used to check sudden surge in imports..

2.1. Bilateral revealed comparative advantage index (BRCA)

The concept of revealed comparative advantage (RCA) by Balassa (1965) is among the most widely used methodologies to analyse the relative advantage or disadvantage of a country or group of countries in selected goods/services as evidenced by trade flows. The concept is based on the Ricardian theory of trade, which hypothesizes that trade among countries is governed by their relative differences in productivity. The concept of revealed comparative advantage was first presented by (Liesner, 1958); this concept was further developed by (Balassa, 1977) to measure the comparative advantage of any sector or product.

The index is calculated as the ratio of a country's share in the global exports of a particular product or group of products to its share in the overall global trade. The BRCA index, on the other hand, has the same denotation as that of the RCA index; however, in this case, it is

calculated in terms of the bilateral market with respect to the world market share. The computation BRCA index has been depicted below

$$BRCA_i = \frac{\sum A_{iX} \,/\, \sum A_X}{\sum W_{iX} \,/\, \sum W_X}$$

where,

$BRCA_i$ stands for Bilateral Revealed Comparative Advantage of the product "i" export from country A

$\sum A_{iX}$ stands for exports of product "i" from country A to B

$\sum A_X$ stands for summation of all product exports from country A to B

$\sum W_{iX}$ stands for total exports of product "i" from world to country B

$\sum W_X$ stands for summation of all products exported from world to country B

A country is said to have BRCA in product "i", if the value of the index exceeds unity. Conversely, the country is said to be lacking RCA, if the value of the index is less than unity.

The values of index mentioned above have been normalized between the range of +1.0 and -1.0 to suppress the skewness problem. To do that following method is used, Normalized BRCA = (BRCA- 1)/ (BRCA+ 1).

2.2. Export Intensity Index (EII)

The index is primarily used to know how intensive the export relationship is between the two trading partners (Nag & Chakraborty, 2019). In the current study, the index is used to calculate the intensity of steel exports of countries like China, South Korea, Japan, etc., in the Indian (partner) market, as compared to other countries of the world. In the index, country X is said to have an intensive export relationship with a partner country in a product category if the value

of the above index exceeds unity. Conversely, the relationship is non-intense, if the value of the index is less than unity. To calculate the index the following formula is applied:

$$\textit{Export Intensity Index (EII) of Country X} = \frac{\frac{EC_j^x}{EC_w^x}}{\frac{WOR_j^x}{WOR_w^x}}$$

Where,

EII: stands for EII of Country X (here CJK countries separately) for the selected product (Steel) to country j (here India)

EC_j^x : Stands for exports of i-th product (Steel Products (HS: 7206 to 7306) in this case) from country X to country j

EC_w^x : Stands for summation i-th product export from Country X to all countries

WOR_j^x: Stands for exports of i-th product from rest of the world to country j/import of i-th product by country j from rest of the world

WOR_w^x: Stands for world's export of i-th product to the world/world's import of i-th product from the world

Despite the wide use of the above-mentioned methodologies, there exist several criticisms and limitations of them (See Nag & Chakraborty, 2019). For instance, the BRCA index does not take into account the tariffs amd non-tariff measures imposed on different imported goods, which might lead to inadequate results for policymakers (Gilbert & Mikic, 2009).

2.3. SMART (Software for Market Analysis and Restrictions on Trade) Model

The SMART model by World Integrated Trade Solution (WITS) has been used to assess the impact on trade due to the reduction of tariffs (Choudhry et al., 2013; Veeramani & Saini, 2011). The model analyzes the possible impact of the reduction in tariffs on the flow of imports

(exports), trade creation, trade diversion, revenue, welfare, etc. The model, however, does not take into consideration the factor market, prices, or changes in resource allocation due to variations in tariffs. In other words, the model does not report on the economic interactions between the different markets in a given economy. The model hypothetically changes the import tariff and focuses on the changes in imports into a particular market due to the change in trade policy. The market demand in the model is based on the Armington assumption, which states that, for a specific good, imports from two sourcing countries are imperfect substitutes for each other.

The WITS-SMART model itself provides the data and related elasticity values (including default values). The following data is required for the model: 1) Import values for each trading partner 2) Tariff faced by each trading partner 3) Import demand elasticity 4) Export supply elasticity and 5) substitution elasticity across product categories. The model accepts only one import demand elasticity for a product at HS 6-digit level irrespective of national variety. Export supply elasticity is assumed same for all exporters of the same product. Substitution elasticity is also assumed to be the same for any couple of varieties of products (World Integrated Trade Solutions [WITS], 2021).

The theoretical background behind the model has been clearly explained by Laird and Yeats (1986) & Jammes and Olarreaga (2005). Two key concepts within the WITS-SMART framework known as trade creation & trade diversion have been used in the current study. The reduction in tariffs model allows the estimation of the total trade effect that is further divided into trade creation and trade diversion effects. Trade creation effect (TC) is defined as the direct increase in imports due to a reduction in the tariff imposed on goods g from country c. To attain this, SMART uses the import demand elasticity (In the present study the import demand elasticity is taken as a system driven). To calculate the trade creation the following formula is applied:

$$TCijk = Mijk^* \eta * \Delta tijk / ((1+ tijk) * (1- (\eta/ \beta)$$

Where,

TCijk – Trade creation on commodity i imported from country k into country j

Mijk – Imports of commodity i to country j from exporting country k

η – Import elasticity of demand in the importing country

tijk – Tariff

β – Export supply elasticity

In this model reduction in tariffs for one or a selected group of countries also produces a trade diversion effect (TD). If the reduction in tariff on good g from country c (or group of countries) is a preferential tariff and it does not apply to other countries, then imports of good g from country c (or group of countries) are further going to increase due to the substitution away from imports of good g (also known as substitution effect) from other countries that become relatively more expensive. In other words, the reduction of tariffs under a preferential trade agreement would replace imports of highly efficient non-preferential partner countries with imports from less efficient preferential partner countries. The substitution effect depends on the substitution elasticity of imports of good g from country c and all other countries. In the present study, the substitution elasticity is taken as 1.5. To calculate the trade diversion the following formula is applied:

$$\mathbf{TDijk} = \frac{\mathbf{M\,jpn} * \mathbf{M\,row}\left(\left(\frac{(1+t1)}{(1+t0)}\right) - \mathbf{1}\right) * \boldsymbol{\lambda}}{\mathbf{M\,jpn} + \mathbf{M\,row} + \mathbf{M\,row}\left(\left(\frac{(1+t1)}{(1+t0)}\right) - \mathbf{1}\right) * \boldsymbol{\lambda}}$$

Where,

TDijk - Trade diversion on commodity i imported from country k into country j

M jpn - Imports from Japan

M row - Imports from the Rest of the world

tijk - Tariff (t1 & t0 refer to post and pre integration tariffs)

λ - Substitution elasticity

Export supply elasticity in the present study is assumed as infinite (the default value in SMART model is 99 meaning infinite export supply elasticity) which gives import quantity effect only. Altering it to a finite elasticity will affect results by transforming part of the trade creation (quantity effect) into a price effect.

3. RESULTS AND DISCUSSION

Before going into the results and discussions of the methodology mentioned above, it is imperative to briefly understand the structure of India's steel imports. India imports steel from mainly three countries South Korea, Japan, and China. Over the years, the share of these three countries in India's imports has remained above 70 percent. Around 90 percent of imports are of Flat Products & around 10 percent are of Non-Flat Products. The key Flat products are Flat products of Alloy & Stainless (Share in Total in 2021-22: 33%), HR Coils/Sheets (17%), GP/GC Sheets (16%), and Electrical Sheets (9%).

3.1. Bilateral Comparative Advantage with India

The BRCA index in the current study is employed to investigate the comparative advantage of Japan, South Korea, ASEAN, China, and the USA in the Indian market. The index has been specifically calculated for steel products (HS 7206 to 7306) for the years 2017 to 2019 to take into account the period in which the US imposed the duties under Section 232. Their index has been calculated for thirty product categories at HS's four-digit level. Among all the countries taken into consideration, South Korea and Japan have the largest number of lines that have normalized BRCA values of greater than 0, these are followed by China, ASEAN, and the USA. In 2018, out of thirty product lines South Korea has around 24 lines that have a comparative advantage in the Indian market. China & USA, which is not preferential trade partner of India, had 17 and 3 product lines, respectively, that have a comparative advantage in India. It is also interesting that in 2018 the number of lines where China has a comparative

advantage in India jumped from 14 in 2017 to 17 in 2018. The result of the index has been shown in the table below.

Table 2: Bilateral Revealed Comparative Advantage (BRCA) in Indian Market (In No.s)

	2017	2018	2019
Categories	**Number of Lines at 4 Digit where India's Normalized BRCA Value > 0 (Total Lines @ 4 Digit Level = 30)**	**Number of Lines at 4 Digit where India's Normalized BRCA Value > 0 (Total Lines @ 4 Digit Level = 30)**	**Number of Lines at 4 Digit where India's Normalized BRCA Value > 0 (Total Lines @ 4 Digit Level = 30)**
Japan-India	20	21	21
South Korea-India	26	24	22
ASEAN-India	12	13	9
China-India	14	17	13
USA-India	4	3	1

Source: Authors calculation based on ITC TradeMaps Data

The result of this BRCA analysis reveals that preferential trade partners had significant comparative advantage over non preferential trade countries around 2018. These results of the BRCA analysis are consistent with the findings of Yoon & Kim (2006), Podoba et al., (2021) and Batra & Khan (2005).

3.2. High Export Intensity & Excess Steel Making Capacity of Selected Preferential & Non-Preferential Trade Partners

The index is calculated to check the intensity of steel exports of selected countries in Indian (partner) market, as compared to other countries of the world. In other words, whether China, Japan, South Korea, Vietnam and Germany export to India, it is having a greater presence in its

export basket of Steel products in comparison with the world's export inclination to that country.

Table 3: Comparison of Export Intensity Index (In Steel Products) for Selected Countries in India

Period	Export Intensity Index (EII) for Selected Countries in India				
	Japan	Korea	China	Vietnam	Germany
Q3, 2017	1.37	2.92	1.82	2.44	0.24
Q4, 2017	1.52	3.46	1.79	3.47	0.32
Q1, 2018	1.96	4.28	1.68	2.57	0.42
Q2, 2018	1.87	4.05	1.65	2.68	0.29
Q3, 2018	1.65	3.30	1.38	3.20	0.33
Q4, 2018	1.21	3.31	1.54	3.83	0.34
Q1, 2019	1.51	3.40	1.36	2.09	0.24
Q2, 2019	1.55	3.68	1.39	3.12	0.36

Source: Authors Compilation based on ITC Trade maps Data

Note: As the index does not include any information on trade barriers directly while constructing the same, qualitative information on that front may be checked before coming to any conclusions

The index has been specifically calculated for a few quarters before and after the implementation of tariffs by the US on steel products. The data for computing EII on all five data series involving HS 7206 to 7203 was drawn from Trade Maps. The bilateral EII results for selected countries involving Indian export markets are summarized in table 2 above. An appealing dynamic emerges from the results. All the countries with the only exception of Germany have shown intensive export relations with India in Steel Products. Among all the countries South Korea has the highest export intensity in the Indian market. The intensity of the relationship between Japan, South Korea, and Vietnam experienced a rise in Q1 & Q2 of 2018 thereafter it slightly fell. The index is near zero for Germany, as its steel exports to India are not significant and also because there is no Free Trade Agreement between the two. The results of EII of South Korea are also consistent with a study by Sahoo et al. (2009) that found that export intensity for overall merchandise goods of South Korea has been much greater than

that of India implying exports of South Korea to India have been greater than its exports to the world on average.

Apart from the export intensity, there is also a need to look at the excess capacity of the preferential trade partners of India, as global excess steelmaking capacity has become one of the major issues in the steel markets around the world. The steelmaking capacity of China alone accounts for almost half of the global steelmaking capacity. By looking at a long period of time it was found that the global steelmaking capacity increased from 1587 Mt in 2007 to 2,233 Mt in 2018 which is an increase of around 40% in a decade. A recent report by the OECD (2019) steel committee states that "Low growth prospects for the global economy, slowing demand for steel and virtually unchanged steelmaking capacity are driving severe and persistent excess capacity in the steel sector".

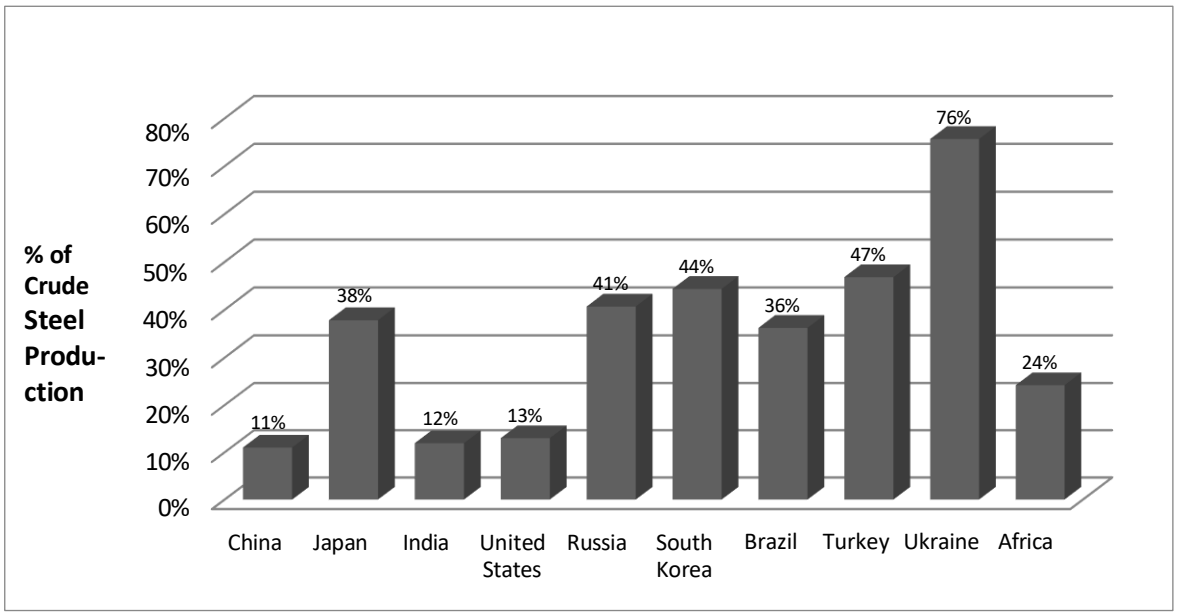

Figure 2: Exports of Semi-finished and Finished Steel Products as % of Crude Steel Production

(Value is the average share for the period 2013 – 2017)

Source: Authors calculation based on the data of World Steel Association

Figure 1 above depicts the situation of steel surplus exporting countries. The majority of steel-producing countries have a very high export-to-production ratio specifically the two key preferential trade partners for steel products of India, Japan, and South Korea. Japan and South Korea are the world's third and sixth-largest producers of steel in the world, respectively. The exports of semi-finished and finished steel products as a percentage of crude steel production

of these two were recorded to be as high as 38-44 percent. To resolve the issue of overcapacity in the steel industry Xiong (2017) argues that supply-side reform is key to achieving the objective of reducing excess capacity and *"in this process, it is indispensable for the government to play the role of macro-control policies to guide economic entity and need for the steel enterprises to follow the market rules to make reasonable production plan."*

3.3. Implication of India's Tariff Reduction (on Selected Steel Products) through Partial Simulation using WITS SMART

In this section, the SMART partial equilibrium modelling tool is used to analyze the impact of the reduction in tariffs by India on Total Trade which includes Trade Creation & Trade Diversion effects. The two simulations were conducted on selected crude steel products (from HS 7206 to 7306 at a six-digit level) based on the methodology discussed in the previous section. In the simulation, the tariffs are reduced for three of India's FTA partners Japan, South Korea, and ASEAN. Two simulations with the following scenario were conducted

In the first simulation, India reduces duty by 50 percent (linear cut of 50 percent in WITS SMART) on the import of steel products from Japan, South Korea & ASEAN countries. The first simulation is done for the year 2010/ 2010 MFN rate. The initial year '2010' has been chosen deliberately as all the three FTAs were signed between the years 2010 & 2011.

In the second simulation, India reduces duty by 100 percent (linear cut of 100 percent in WITS SMART) on the import of crude steel products from Japan, South Korea & ASEAN countries. The second simulation is done for the year 2018/ 2018 MFN rate.

In the simulation, the duty for all other countries remained unchanged. The results of the first simulation have been summarized in Table 4. It is very important to note that with the reduction of duty by 50 percent from some of the major steel exporting countries in the world the import by India in the combined crude steel products has increased significantly. It can be seen from table 3 that the imports (Total trade effect) are significant from all the FTA countries for which the duty was reduced. The total trade effect (increase in import by India) from the world is around 115 million USD, Japan, and South Korea has shown the largest change in total trade or imports by India.

It is worth noting that the rise in imports from all the FTA partners (control group) is not only due to the trade creation effect but also due to the significant trade diversion effect, which implies that imports from other countries will go down significantly and the space will be filled by import from these FTA countries. Another aspect concerning the trade diversion is that most of the increase in the steel exports from these FTA partners to India will lead to negative trade diversion or reduction in imports specifically from China, the United States, and European countries (See table below 5).

Table 4: Post Simulation, Trade Creation & Trade Diversion on 2010 MFN (Infinite Export Elasticity)

Reporter Name	Partner Name	Product Code	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Old Simple Duty Rate	New Simple Duty Rate	
India	World	Crude Steel	115419.97	115419.97	0.001	5.44	4.89	
India	Vietnam	Crude Steel	1955.916	1791.632	164.284	2.64	1.32	FTA Partners (Control Group)
India	Indonesia	Crude Steel	1355.103	729.139	625.965	2.74	1.37	
India	Japan	Crude Steel	91446.798	64661.735	26785.062	6.13	3.07	
India	Korea, Rep.	Crude Steel	48594.17	41048.679	7545.49	2.78	1.39	
India	Malaysia	Crude Steel	3472.213	2408.694	1063.519	2.95	1.48	
India	Philippines	Crude Steel	35.421	30.77	4.65	3.42	1.71	
India	Singapore	Crude Steel	1713.631	1338.845	374.786	2.7	1.35	
India	Thailand	Crude Steel	4165.661	3410.474	755.187	2.95	1.47	
India	China	Crude Steel	-14471.598	0	-14471.598	6.08	6.08	Non-FTA Partners

India	Germany	Crude Steel	-2904.086	0	-2904.086	5.98	5.98	
India	Russian Federation	Crude Steel	-2403.689	0	-2403.689	5.85	5.85	
India	United States	Crude Steel	-2125.133	0	-2125.133	6.08	6.08	
India	Ukraine	Crude Steel	-1487.319	0	-1487.319	5.69	5.69	
India	Italy	Crude Steel	-1458.208	0	-1458.208	6.01	6.01	
India	France	Crude Steel	-1250.736	0	-1250.736	6.16	6.16	
India	Taiwan, China	Crude Steel	-1232.794	0	-1232.794	5.74	5.74	
India	Spain	Crude Steel	-1207.116	0	-1207.116	5.88	5.88	
India	Belgium	Crude Steel	-1187.054	0	-1187.054	5.82	5.82	
India	Nepal	Crude Steel	-1072.246	0	-1072.246	1.12	1.12	
India	Sweden	Crude Steel	-610.911	0	-610.911	6.25	6.25	
India	United Kingdom	Crude Steel	-585.462	0	-585.462	6.13	6.13	

Source: Authors compilation based on the WITS SMART Database

The second simulation is done on 2018 MFN rates the same year when the United States, European Union, and some other countries-imposed safeguard measures on steel imports. It is to inform you that in the year 2018, most of the steel products in India attracts close to zero tariffs from the selected FTA. However, some products still have to face the duties. Table 4 below depicts the result of the simulation done on 2018 data. The result shows that with the reduction of duties by India to zero on all the selected steel products for Japan, South Korea, and ASEAN countries, the total trade effect is positive from Japan and S. Korea. It should be noticed that the significant amount of increase in imports from S. Korea is coming through trade diversion. In the second simulation, it was found that some trade diversion has also started from the ASEAN countries, which was not there in the previous simulation. It should also be

noticed that with the increase in steel imports from South Korea, a significant amount of trade is being diverted from non-FTA partners like China, the United States, and Europe. The result of the analysis was found to be contradictory to the study done by Lee (2019) & Varma & Gautam (n.d.) on India-Korea CEPA & India-Japan CEPA respectively for products like automobiles, machinery, textile, etc. Their studies found that due to the reduction of tariffs by India for Japan and Korea, the imports would increase significantly due to the trade creation effect rather than the trade diversion effect.

Table 5: Post Simulation, Trade Creation & Trade Diversion on 2018 MFN (Infinite Export Elasticity)

Reporter Name	Partner Name	Product Code	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Old Simple Duty Rate	New Simple Duty Rate	
India	World	Crude Steel	23382.991	23382.992	0	6.48	6.34	
India	Korea, Rep.	Crude Steel	22469.157	13791.727	8677.43	0.64	0	FTA Partners (Control Group)
India	Japan	Crude Steel	9436.667	9591.265	-154.598	0.57	0	
India	Malaysia	Crude Steel	-468.03	0	-468.03	0	0	
India	Indonesia	Crude Steel	-330.583	0	-330.583	0	0	
India	Vietnam	Crude Steel	-190.871	0	-190.871	0	0	
India	Singapore	Crude Steel	-158.686	0	-158.686	0	0	
India	Thailand	Crude Steel	-156.039	0	-156.039	0	0	
India	Philippines	Crude Steel	-0.101	0	-0.101	0	0	
India	Lao PDR	Crude Steel	0	0	0	0	0	
India	Myanmar	Crude Steel	0	0	0	0	0	
India	China	Crude Steel	-3686.669	0	-3686.669	10.25	10.25	Non-FTA Partners
India	Belgium	Crude Steel	-459.792	0	-459.792	10.15	10.15	
India	France	Crude Steel	-390.326	0	-390.326	9.88	9.88	
India	Germany	Crude Steel	-348.732	0	-348.732	10.07	10.07	
India	USA	Crude Steel	-309.937	0	-309.937	10.05	10.05	
India	Italy	Crude Steel	-273.208	0	-273.208	9.96	9.96	
India	Slovenia	Crude Steel	-189.811	0	-189.811	9.24	9.24	
India	Spain	Crude Steel	-162.068	0	-162.068	9.94	9.94	

Source: Authors compilation based on the WITS SMART Database

The majority of FTAs signed by India have led to more favorable gains for its trade partners but, in turn have worsened the country's trade balances in the post-FTA period (Saraswat et al., 2018). India's import of finished steel products from the FTA route has increased significantly over the years and currently stands at around 60 percent of the total steel imports. These imports generally are not subject to any of the state or central levies/taxes borne by the Indian steel mills like the Royalties on Raw Materials, Special cess, Electricity duties, Taxes on Petroleum Products, etc. Therefore, Indian steel imports (at zero duty) from FTA countries such as ASEAN, Japan, and South Korea have recorded an increase of 159 percent from 1.98 million tons in 2009-10 (pre-FTA) to 5.12 million tons in 2018-19. As a result, despite being the 2nd largest global steel producer, the Indian steel market remains vulnerable to any trade shock such as the imposition of steel tariffs under Section 232 by the US.

3.4. Other Factors Leading to Surge in Imports Post Imposition of Duties by United States

Apart from the role of the FTA, there have been other factors that were responsible for the surge in imports in India. One of them is the lesser duty rule (LDR) followed by India in case of anti-dumping duty (ADD) or countervailing duty (CVD) investigations. As per this rule, ADD/CVD on imported products should either be the margin of dumping or the margin of injury, whichever is lesser. At the time of duties imposed by the US, there were several ADD and CVD enforced in India on flat products of steel & stainless steel originating in China, Japan, Russia, South Korea, Brazil, and Indonesia, however, due to the LDR most of them were ineffective in protecting the interest of domestic players. Many countries impose ADD based on the dumping margin and not on the injury margin. Many jurisdictions are also responding to evolving circumstances by changing their trade regimes to ensure quick action: the EU (2018), Australia (2013), and Brazil (2012) have also diluted LDR to modernize their trade defense instruments (Descotis, 2016). An ADD investigation by the EU on imports from Russia "concluded that a duty lower than the margin of dumping would not be sufficient to remove injury to the EU industry and imposed measures at the level of the dumping margin in respect of Russia." (Nehra, 2020)

The other reason is the absence of any steel import monitoring mechanism/system in 2018 available in the US, Canada, and Mexico. The purpose of these systems is to give advanced information about the imports of steel products entering the country, which helps the

government to work out effective policy formulations in case of any sudden hike in imports. India introduced its steel import monitoring system (SIMS) in November 2019, however, the consistency of these import monitoring mechanisms with WTO law is still in question. (Aman, 2016)

3.5. Compatibility with GATT/WTO Law and Recent WTO Rulings on United States Tariffs

It has been argued by many trade law experts that the tariffs imposed by the United States in March 2018, citing the impairment of its national security under section 232 of the US Trade Expansion Act (1962) violates GATT/WTO law. The experts believe that these tariffs violate Article II (1) (a) and (b) of 1994, GATT as they are above the bound tariffs committed by the United States and also violates Article I (1), GATT on Most Favoured Nation (MFN) principle, by exempting Mexico & Canada. The US defended its action by justifying its action under Article XXI (b)(iii), GATT, which permits member states to take "any action which it considers necessary for the protection of its essential security interests… taken in time of war or other emergencies in international relations". (Arora, 2019)

By fearing the possibility of large trade diversion and threat of injury to their domestic industry nine countries challenged these measures at the WTO and imposed retaliatory safeguard tariffs by exercising the provision of Article XIX, GATT, and Article I, Safeguards Agreement (SGA). These affected states rejected the national security argument behind the US tariffs and instead categorized them as a safeguard measure, but not as per WTO prescription. Imposing retaliatory tariffs as safeguard measures led the United States to file WTO cases against the affected countries for illegally retaliating. The argument used by the US is that the provision under Article XXI (b)(iii), GATT, has a self-judging character and that it is "non-justiciable," or is beyond the scope of review of the Dispute settlement body of the WTO.

However, it is essential to mention that Russia and Saudi Arabia applied the national security logic in their other cases at the WTO, but the WTO found otherwise, insisting that national security is "an objective fact, subject to objective determination." (BUSCH, 2022) A recent judgment by a WTO panel on December 9, 2022, ruled against the US in challenges brought by Norway, China, Switzerland, and Turkey. The panel report[3] concluded that it "does not find,

[3] World Trade Organization. (2022). UNITED STATES – CERTAIN MEASURES ON STEEL AND ALUMINIUM PRODUCTS REPORT OF THE PANEL (p. 93).

based on the evidence and arguments submitted in this dispute, that the measures at issue were "taken in time of war or other emergencies in international relations" within the meaning of Article XXI(b)(iii) of the GATT 1994. Therefore, the Panel finds that the inconsistencies of the measures at issue with Articles I:1, II:1, and XI:1 of the GATT 1994 are not justified under Article XXI(b)(iii) of the GATT 1994." However, the final ruling of different cases on the subject is still pending due to the non-functional WTO's Appellate Body.

3.6. Policy Suggestions

Based on the analysis of WTO law and the policy measures adopted by other economies, it was found that there exist effective trade measures that can be implemented by developing countries like India to protect their domestic industry from any sudden rise in imports in near future. One key measure among them is to include the Auto-Trigger Safeguard Mechanism (ATSM) in all its existing or under-negotiation preferential trade agreements. As per this tool, in case there is an overflow of imports of selected goods from the preferential partner, after reaching a certain threshold, the safeguard duties will automatically be initiated. These thresholds can be mutually decided by the countries. For instance, ATSM has been negotiated under the Free Trade Agreement between Viet Nam and The EURASIAN Economic Union and under the Comprehensive Economic Cooperation and Partnership Agreement (CECPA) between India-Mauritius. There also exist examples of more stringent sector-specific ATSM, South Korea, in some of its preferential trade agreements has negotiated mechanism that allows their government the authority (and not the opposite FTA partner) the option of imposing the safeguard measure on certain agriculture products. (Seshadri, 2019).

In addition to the above measures, to safeguard the industry, a country has also the right to impose Suo Motu safeguard measures as a result of unforeseen developments under GATT 1994 (Article XIX: 1(a)). However, no safeguard measure has been announced by India on steel products post-implementation of tariffs by the US. It is argued that the adoption of WTO-compliant measures to safeguard the domestic industry is the accepted standard worldwide that India could have adopted.

It is argued that in a worst-case scenario, the imports from the preferential trade partners at a concessional rate can be stopped by exiting the FTA/RTA under the exit clause. The exit clause allows a disappointed party to the agreement to terminate the trade policy obligations. The

agreement can also be terminated by utilizing customary international laws such as the Vienna Convention on the Law of Treaties (VCLT) specifically for those agreements where an exit clause has not been incorporated. Under the VCLT an agreement can be terminated with mutual consent or unilaterally or through modification. Article 54(b) with Article 56 of the VCLT highlights that trade treaties are temporary and can be terminated unilaterally.

4. CONCLUSIONS

The BRCA analysis highlighted that Japan, South Korea, China, and ASEAN member countries enjoy a significant comparative advantage in steel products. The export intensity index (EII) analysis reveals that Japan, South Korea, Vietnam, and China had a greater presence in their export basket of steel products to India as compared to other countries specifically post-implementation of tariffs by the US. The results of the two WITS-SMART simulations on crude steel products through selected preferential trade routes have revealed that due to the reduction of import tariffs by India, there will be a significant increase in the imports of steel products not only due to trade creation but also due to significant trade diversion. The study has suggested two key policy measures that can be adopted to protect its domestic markets from any such import surge or unbalanced trade in the future. One of them is the inclusion of the Auto-Trigger Safeguard Mechanism (ATSM) in the existing and future preferential trade agreements and the other is the imposition of Suo Motu safeguard measures on steel products that are compatible with the GATT/WTO law.

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