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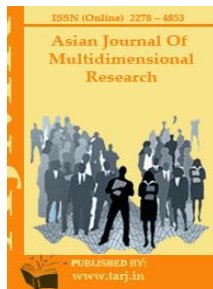
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## EMERGING LEADERSHIP AMONG WOMEN: A CASE STUDY OF MUNICIPAL CORPORATION, CHANDIGARH

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### ABSTRACT

*Women's leadership and women empowerment is ranked high on the agenda of governments, bilateral and multilateral agencies and non- governmental organisations, including women's rights groups. In the political arena in particular, there is growing momentum among governments to foster and ensure women's participation and leadership in governance structures. Provision of quotas for women's representation at different levels of governance has been a strategic tactic in achieving this goal in many countries. The government of India has taken power steps to empower women through local bodies by enhancing their presence through the provision of 33 per cent reservation under the 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendment Act, 1992 in both rural and urban local bodies. Almost two decades have gone by, enough time to assess the effects these changes on the women leadership. Thus, the researchers have made effort to assess the emerging leadership in the local governance in the city beautiful by analyzing the participation of the women councillors in the local affairs of the Chandigarh Municipal Corporation.*

### INTRODUCTION

Leadership is defined as influence, the art or process of influencing people so that they will strive willingly and enthusiastically towards the achievement of goals. This concept can be enlarged to imply not only willingness to work but also willingness to work with zeal and confidence. Zeal reflects ardor, earnestness and intensity in the execution of work; confidence reflects experience and technical ability. To lead is to guide, conduct, direct and proceed towards a well thought destination or goal. Leaders act to help a group to achieve its objectives with the maximum application of its capabilities. Leaders do not stand behind a group to push and to prod; they place themselves before the group as they facilitate progress and inspire the group to accomplish organisational goals. A

pertinent example is that the orchestra leader, whose function is to produce coordinated sound and correct tempo through the integrated effort of the instrumentalists. Depending upon the quality of the director's leadership, the orchestra will respond.<sup>1</sup>

Leadership depends on both power; the ability to influence people and authority; the ability to influence decision-making and resource allocation. Ideally, leadership programmes encompass both and they build on an individual leader's innate power as well as the leader's capacity to properly serve his or her constituency a process that should ultimately serve to further legitimate both the leader's authority and the influence of the collectivity as a whole. Leadership initiatives must be owned by the group. Creative, participative planning initiatives must also be linked to budgetary authority to be functional or else not depend upon it for financing. To be effective, leadership development should be set within and effect influence over the decision-making context.<sup>2</sup>

## **LOCAL LEADERSHIP**

Local leadership for human development is a catalyst for good governance and human development. It is a driver that has the potential to directly advance on-going processes; create links between existing levels; negotiate on behalf of local interests and connect them with the national; advocate for increased investments; and plan constructively for the medium and long term. Effective local leadership is a key strategic component for democratic governance and human development.

## **LEADERSHIP AMONG WOMEN**

Women's leadership and effective participation is increasingly on the development agenda of governments, bilateral and multilateral agencies and non-governmental organisations, including women's rights groups. Evidence from programmes and research demonstrates the important role women play as key actors and decision-makers in the development process across a wide range of sectors.<sup>3</sup> In the political arena in particular, there is growing momentum among governments to foster and ensure women's participation and leadership in governance structures. Establishing quotas for women's representation at different levels of governance has been a strategic tactic in achieving this goal in many countries.

In India, affirmative action for women and disadvantaged groups has been enshrined into the constitution. The Constitution (73<sup>rd</sup> and 74<sup>th</sup> Amendment Act), enacted in 1992, calls for the reservation of a minimum of one-third of seats for women (both as members and as chairpersons) within elected governance bodies commonly referred to as Panchayati Raj Institutions and Municipal Corporations.

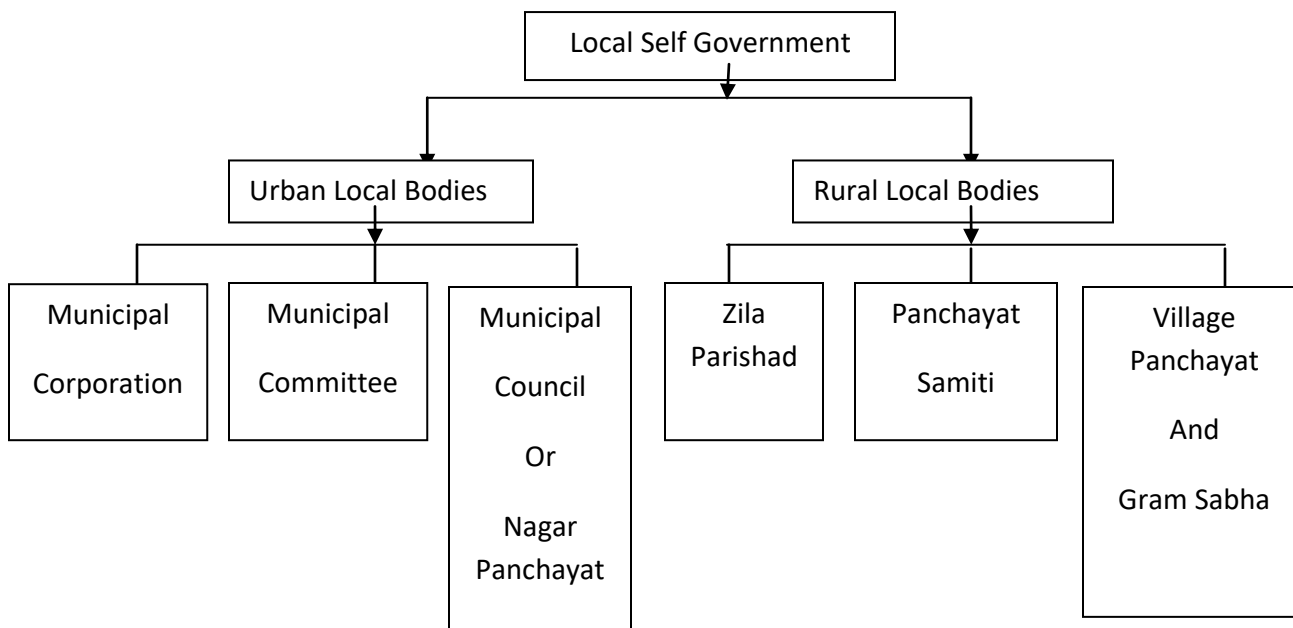
Affirmative action to ensure women's political representation is an important step in democratising and engendering local governance. However, it has not been adequate to ensure women's leadership and their effective participation in local governance,<sup>4</sup> as elected women representatives (EWRs), continue to face several institutional and social barriers. At the institutional level, the capacity of local governance structures to implement reforms, institutionalise accountability systems, decentralise functions and facilitate women's active engagement plays a role in determining whether women are able to emerge as political agents and actors.<sup>5</sup> Social barriers include lack of education, lack of respect for women in local bodies, physical violence against women in the public and [ . Although there are women leaders who have taken the initiative and made remarkable changes on behalf of their constituencies,<sup>6</sup> it is widely acknowledged that generally EWRs face many facets of gender discrimination.

The presence and participation of women in local governance structures also does not guarantee



that the issues community women are concerned about and those that underlie social injustices will be taken up and addressed by PRIs. Studies<sup>7, 8</sup> have highlighted that EWRs articulate and emphasise priorities that are different from men, although these priorities largely remain within the framework of development (i.e., access to basic amenities and infrastructure). Such priorities at best serve women's practical gender needs and not their strategic gender interests. Practical gender needs are immediate perceived needs identified by women such as water and healthcare, which fall within their socially defined roles. Meeting these needs does not necessarily involve challenging women's status in society or a focus on gender equity.<sup>9</sup> However, approaches that respond to women's strategic gender interests seek to transform gender relations and change women's position in society rather than only improve their condition.

### POLITICAL STRUCTURE AT THE LOCAL LEVEL



### LOCAL SELF GOVERNMENT

Local government is at the bottom of the pyramid of governmental institutions with the national government at the top and state government as intermediate government at the middle and Local Self Government at the grass root level. No government structure, whatever its character can be complete without some form of local institutions. The system of Local Government is found in every nation as a part of its governmental or constitutional structure. Local government is an administrative body for a small geographic area such as city, town or state. To be precise local governments are created to have control over specific geographical region, and cannot pass or enforce laws beyond that area.

Local governments can elect officials, enact taxes, and do many other things that a national or state government would do, just on a smaller scale. The local government further contributes to the strengthening of democracy as policies can best be formulated and executed by the local officials who are close to the people. It also reduces the burden of the national and state level and serves as an ideal channel between national and the state government. It also ensures people's participation in the affairs of local government through devolution of powers at the grass root levels.

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## **LOCAL SELF GOVERNMENT IN INDIA: HISTORICAL BACKGROUND**

Local government institutions have existed in India in one form or another since ancient times. The present form of urban local government in India owes its genesis to the British rule. The initiation began with Samuel Laing, member of the Viceroy's Council, in the Budget Speech (1861-62) proposing that local services should be based on local resources. Lord Mayo's Resolution of 1870 introduced the concept of elected representatives in the municipalities. Lord Ripon is considered the founding father of urban local government as he implanted the concept of municipal authorities as units of self-government. His Resolution of 18 May 1882 on local self-government dealt with the constitution of local bodies, their functions, finances and powers and laid the foundation of local self-government in modern India. Local self-government played an important role in the Independence Movement. After Independence, the Constitution of India was framed on federal principles. Indian Constitution makers divided the government functions in three lists: Federal, State and Concurrent. Local governing bodies are covered in the State List and are governed by the State Statutes or in the case of Union Territories by the Union Parliament.

Recent years have witnessed an increasing interest and a growing consciousness of the need and importance of local self-government as provider of services to the local community as well as an instrument of democratic self-government. Local government is an integral part of the national government structure, the level of government closest to the citizens and in the best position both to involve them in the decision making process of improving their living conditions and to make use of their knowledge and capabilities in the promotion of all round development. There are two types of local government: urban local government and rural local government. Until recently, urban local government was manifested in Municipal Corporations, Municipal Councils, Town Area Committees and Notified Area Committees. However, the Seventy-Fourth Constitution Amendment Act adopted in 1992 proposed uniform structure of Municipal Corporations, Municipal Councils and Nagar Panchayats. For the rural local governments the 73<sup>rd</sup> Constitutional amendment act provides for three tier structure of Zila Panchayats (Parishads), Taluka Panchayats or panchayat samitis and Village Panchayats.<sup>10</sup>

## **URBAN LOCAL BODIES AFTER THE 74<sup>TH</sup> CONSTITUTIONAL AMENDMENT ACT**

The important provisions specified in the Act include constitution of three types of municipalities, devolution of greater functional responsibilities and financial powers to municipalities, adequate representation of weaker sections and women in municipalities, regular and fair conduct of municipal elections, and constitution of Wards Committees, District Planning Committees, Metropolitan Planning Committees and State Finance Commissions. The Constitution (74th Amendment) Act, 1992 provisions, thus, provide a basis for the State Legislatures to guide the State Governments in the assignment of various responsibilities to municipalities and to strengthen municipal governance. Accordingly, several State Governments have amended their Municipal Acts, Laws and Legislations so as to bring these in conformity with the Constitutional Provisions.

## **TYPES OF MUNICIPALITIES: AFTER 74<sup>TH</sup> CONSTITUTIONAL AMENDMENT ACT**

(i) Nagar Panchayat is a form of urban political unit constituted for area which is in transition from a rural area to urban area. An urban centre having population more than 25,000 and less than 1,00,000 is classified as a Nagar Panchayat. Nagar Panchayats have a chairman with ward members.

(ii) Municipal Councils is à urban local body that administers à city population of 1,00,000 or more. These are constituted for smaller district cities and bigger towns. The members of the Municipal Council are elected representatives. The town is divided into wards according to its population and representatives are elected from each ward. The members elect à president among themselves to preside over and conduct meetings.

(iii) Municipal Corporations are urban local bodies that work for the development of à city, which has population of more than one million and are constituted for larger urban areas.

As our study is confined only to Municipal Corporation therefore an attempt has been made to explain the structure, composition and functions of Municipal Corporations only.

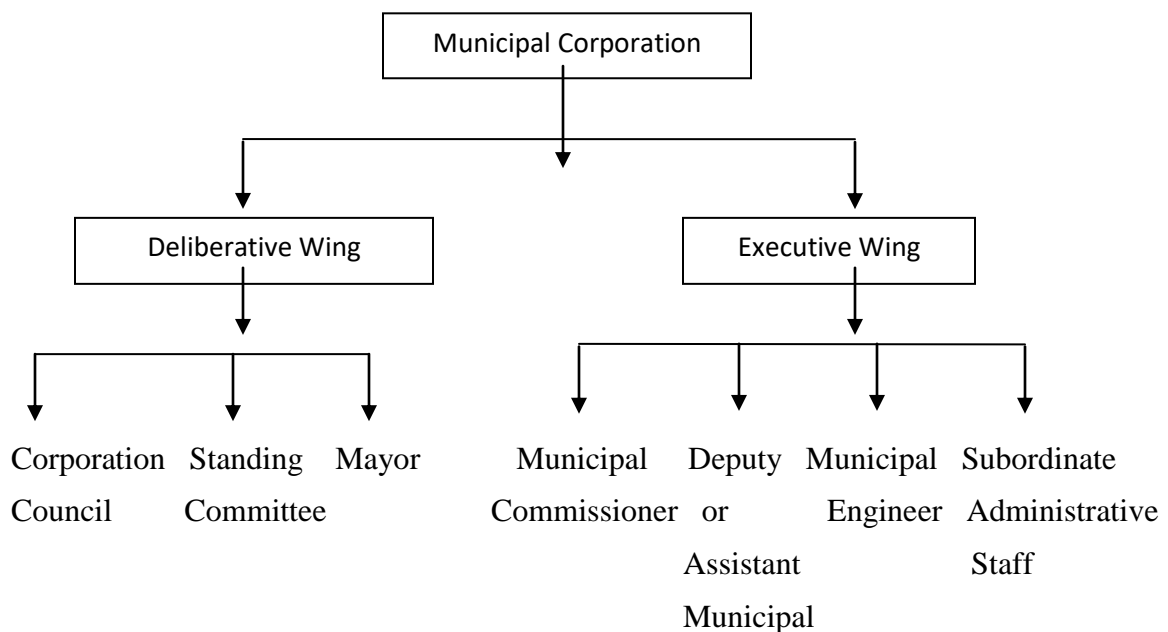
### MUNICIPAL CORPORATION

Municipal Corporations are urban local government that works for the development of a Metropolitan City, which has a population of more than one million.

Each Municipal Corporation has a committee consisting of a Mayor with Councillors. They are formed under the Corporations Act of 1835 of Panchayati Raj system which mainly deals in providing essential services in Metropolitan Cities. Municipal Corporation members are elected from the several wards of the specific city on the basis of adult franchise for a term of five years.

Mayor is the head of the Municipal Corporation. The Municipal Commissioner is the official in charge of this organization. Executive Officers monitor the implementation of all the programs related to planning and development of the corporation with the coordination of Mayor and Councillors.

**FIGURE 1.6: STRUCTURE OF MUNICIPAL CORPORATION AS PER 74<sup>TH</sup> CONSTITUTIONAL AMENDMENT ACT**





Commissioner

## FUNCTIONS OF MUNICIPAL CORPORATIONS

The Municipal Corporation is responsible for roads, public transportation, water supply, records of births and deaths (delegated from central government Births and Deaths Registration Act), sanitation that includes waste management, sewage, drainage and flood control, public safety services like fire and ambulance services, gardens and maintenance of buildings. The sources of income of the Corporation are property tax, entertainment tax, [octroi](#) and usage fees for utilities.

## OBJECTIVE OF THE STUDY

The objective of the study (i) to examine the emerging leadership of women representatives by assessing their participation in the affairs of urban local body.

## RESEARCH METHODOLOGY

The present study covers the Municipal Corporation, Chandigarh. The Municipal Corporation, Chandigarh came into existence in the year 1996 after the enactment of the Constitutional Amendment Act, 1992. There have been 30 Councilors of which 23 have been representing various wards and 7 Municipal Councilors who have been nominated by the Government of India. In the total 23 elected Municipal Councilors, there were 7 women Municipal Councilors as per the reservation requirements.

## DATA COLLECTION

Both primary and secondary data has been collected for the study. Primary Data has been collected by drawing the responses from twenty two (22) women councillors which included thirteen (13) women councilors of the current term (2012-2017) and nine (9) women councilors of the last term (2007-2012). For Secondary Data various annual reports, statistical abstracts, 74<sup>th</sup> Constitutional Amendment Act, Punjab Municipal Act 1911 and Punjab Municipal Corporation Act 1976 as amended from time to time and as applicable to the Municipal Corporation of Chandigarh, various books, journals and articles were referred.

## DATA ANALYSIS

The responses have been drawn from the women councillors by putting them across some statements. The method of cross tabulation has been applied to write the discussion.

**TABLE 1.1: HAS YOUR EXPERIENCE AS COUNCILLOR INSPIRED YOU?**

Attribute/ Responses	Ranks	To contest next election at existing level	To contest election at state level	To contest next election at union level	Not to contest again
Position in MC	Mayor	- (00.0)	4 (66.7)	2 (33.3)	- (00.0)
	Councillor	2	6	4	4

		(12.5)	(37.5)	(25.0)	(25.0)
Age	Below 45 years	2	6	3	-
		(18.2)	(54.6)	(27.2)	(00.0)
	Above 45 years	-	4	3	4
		(00.0)	(36.4)	(27.2)	(36.4)

Source: Computed from Primary Data.

The aspect whether the present experience of the Councillors inspired them to contest the next election or not has been examined with the help of data presented in the **Table 1.1**. The majority of the Mayor respondents, 66.7 per cent were inspired to contest next election at the state level as against 37.5 per cent of the Councillor respondents. The responses of the Councillors were not indicating any clear trend as 25 per cent of the respondents were inspired to contest at union level whereas 25 per cent of the respondents were inspired not to contest election again.

On the basis of Age, it could be ascertained that respondents with age below 45 years were keen to contest elections next time and 54.6 per cent of them were inspired to contribute at state level whereas 36.4 per cent of the respondents above 45 years were not keen to contest next election. However, visibly no clear trend of responses was seen in the above 45 years age group.

**FINDINGS:** More of women representatives opined that they were inspired to contest elections at higher level, considering both Position and Age variable. However, some councillors expressed not to contest elections again.

**TABLE 2.1: WHAT ARE YOUR SOURCES OF GETTING INFORMATION REGARDING DEVELOPMENT PROGRAMMES ON THE POLITICAL AFFAIRS?**

Attribute/ Responses	Ranks	Media	Political Parties	Local Leaders	Local Bureaucracy
Position in MC	Mayor	5	1	-	-
		(83.3)	(16.7)	(00.0)	(00.0)
	Councillor	10	4	2	-
		(62.5)	(25.0)	(12.5)	(00.0)
Age	Below 45 years	6	4	1	-
		(54.6)	(36.3)	(9.1)	(00.0)
	Above 45 years	9	1	1	-
		(81.8)	(9.1)	(9.1)	(00.0)

Source: Computed from Primary Data.

On analyzing the data presented in Table 2.1, it was found that 83.3 per cent of Mayor respondents and 62.5 per cent of the Councillor opined that media as a source of getting information on development programmes/schemes whereas 16.7 per cent of them expressed that political parties was the source of information. Interestingly, local bureaucracy was not emerging as the source of information for the Councillors.

On the basis of Age, fair majority of respondents (81.8 per cent) in the age group (below 45 yrs) stated media was their major source of getting information on development programmes/schemes. Some of the respondents referred to Political Parties as source of information as well. No respondent highlighted the local bureaucracy as the source of information.

**FINDINGS:** Higher proportion of women representatives opined that media as a source of getting information on development programmes/schemes. Interestingly, local bureaucracy was not emerging as the source of information for the Councillors.

**TABLE 3.1: IS BEING A WOMAN A HANDICAP IN GETTING THE PROBLEM SOLVED?**

Attribute/ Responses	Ranks	Agreed	To a large extent	To some extent	Not sure
Position in MC	Mayor	1	-	4	1
		(16.7)	(00.0)	(66.7)	(16.7)
	Councillor	4	2	5	5
		(25.0)	(12.5)	(31.2)	(31.2)
Age	Below 45 years	1	1	5	4
		(9.1)	(9.1)	(45.4)	(36.3)
	Above 45 years	4	1	4	2
		(36.3)	(9.1)	(36.3)	(18.2)

Source: Computed from Primary Data.

The aspect whether a woman was a handicap in getting the problem solved has been analysed in the Table 3.1. The majority of the Mayor respondents, 66.7 per cent agreed to some extent as against 31.2 per cent of the Councillor respondents. Some of the respondents highlighted that they were not sure of that.

On the basis of Age, it was established that 45.4 per cent of respondents with age below 45 years agreed with the statement to some extent as against 36.3 per cent of the respondent above 45 years. However, visibly no clear trend of responses was found in the age variable.

**FINDINGS:** Higher proportion of women respondents considered that being a woman was a handicap to some extent only in their efforts to solve the issues and problems whereas some of them either considered it as a handicap or were not sure of that.

**TABLE 4.1: HOW OFTEN DO THE PEOPLE CONTACT YOU FOR THEIR PROBLEM?**

Attribute/ Responses	Ranks	Very Often	Often	Rarely	Never
Position in MC	Mayor	5 (83.3)	1 (16.7)	- (00.0)	- (00.0)
	Councillor	10 (62.5)	5 (31.2)	1 (6.2)	- (00.0)
Age	Below 45 years	9 (81.8)	2 (18.2)	- (00.0)	- (00.0)
	Above 45 years	6 (54.6)	4 (36.3)	1 (9.1)	- (00.0)

Source: Computed from Primary Data.

On scrutinizing the data presented in Table 4.1, it was ascertained that majority of the Mayor respondents, 83.3 per cent expressed that people contacted them very often with their problem as against 62.5 per cent of the Councillor respondents. Interestingly, there was only one respondent who was rarely contacted by people.

On the basis of Age, it was evident that 81.8 per cent of respondents in the age group of below 45 years as against 54.6 per cent of respondent with age above 45 years stated that people contacted them very often with their problem. Some of respondents were often or rarely contacted by people and no respondent highlighted that she was never contacted by people for their problem.

**FINDINGS:** In both the variables, the higher proportion of women representatives expressed that people contacted them very often or often with their problem.

**TABLE 5.1: IS THERE A CHANGE FOR GOOD IN YOUR SOCIAL STATUS AFTER BECOMING THE MEMBER OF THE MUNICIPAL CORPORATION?**

Attribute/ Responses	Ranks	Significant change	Slight change	No change	Downgraded
<b>Position in MC</b>	<b>Mayor</b>	6 (100.0)	- (00.0)	- (00.0)	- (00.0)
	<b>Councillor</b>	6 (37.5)	6 (37.5)	4 (25.0)	- (00.0)
<b>Age</b>	<b>Below 45 years</b>	8 (72.8)	3 (27.2)	- (00.0)	- (00.0)
	<b>Above 45 years</b>	4 (36.4)	3 (27.2)	4 (36.4)	- (00.0)

Source: Computed from Primary Data.

On assessing the data presented in the Table 5.1, it was found that all the Mayor respondents felt significant change in their social status after becoming the member of the MCs as against 37.5 per cent of the Councillor respondents. The responses of the Councillors were not indicating any clear trend as 37.5 per cent of the Councillor respondents felt slight change in their social status whereas 25 per cent of the respondents felt no change in their social status after becoming the member of the MCs.

Similarly on the basis of Age, 72.8 per cent of respondents with age below 45 years felt significant change in their social status as against 36.4 per cent of the respondents with age above 45 years. However, visibly no clear trend of responses was seen in the above 45 years age group.

**FINDINGS:** The higher proportion of women representatives found significant change or slight change in their social status whereas some of the respondents did not found any change. Interestingly, no one opined that their being Councillor had downgraded the social status.



**TABLE 6.1: HOW OFTEN ARE YOU CONSULTED BY FELLOW CORPORATION REPRESENTATIVES IN PLANNING AND IMPLEMENTATION OF URBAN DEVELOPMENT PLANS OF YOUR AREA?**

Attribute/ Responses	Ranks	Very Often	Often	Rarely	Never
<b>Position in MC</b>	<b>Mayor</b>	5 (83.3)	1 (16.7)	- (00.0)	- (00.0)
	<b>Councillor</b>	8 (50.0)	6 (37.5)	2 (12.5)	- (00.0)
<b>Age</b>	<b>Below 45 years</b>	7 (63.7)	3 (27.2)	1 (9.1)	- (00.0)
	<b>Above 45 years</b>	6 (54.6)	4 (36.4)	1 (9.1)	- (00.0)

Source: Computed from Primary Data.

On analyzing the data presented in the Table 6.1, it was found that majority of the Mayor respondents, 83.3 per cent expressed that they were consulted very often by fellow corporation respondent in planning and implementing of urban development plans of their areas as against 50 per cent of the Councillor respondents. Some of respondents were often or rarely consulted. Interestingly, no respondent highlighted that she was never consulted by fellow representatives.

On the basis of Age, it was evident that 63.7 per cent of the respondents with age below 45 years were consulted very often as against 54.6 per cent of the respondents in the age group of above 45 years. Similarly, no respondent stated that she was never consulted by fellow representatives.

**FINDINGS:** In both the variables, the higher proportion of women representative revealed that they were very often or often consulted by fellow corporation respondents in planning and implementing of urban development plans of their areas. Interestingly, no respondent highlighted that she was never consulted by fellow representatives.

**TABLE 7.1: YOUR PARTICIPATION IN THE COUNCIL MEETINGS HAS PROVIDED YOU OPPORTUNITY TO:**

Attribute/ Responses	Ranks	Express your views on city development	Express your views on your ward development	Raise the common problem faced by the public	Raise the women welfare related problems
<b>Position in MC</b>	<b>Mayor</b>	4 (66.7)	1 (16.7)	- (00.0)	1 (16.7)
	<b>Councillor</b>	5 (31.2)	3 (18.8)	6 (37.5)	2 (12.5)
<b>Age</b>	<b>Below 45 years</b>	3 (27.2)	3 (27.2)	4 (36.3)	- (00.0)
	<b>Above 45 years</b>	6 (54.6)	1 (9.1)	2 (18.2)	2 (18.2)

Source: Computed from Primary Data.

On assessing the data presented in the Table 7.1, it was found that 66.7 per cent of Mayor respondents and 31.2 per cent of Councillor respondents opined that they got chance to express their view on city development through participating in MCs. Some of the respondents stated that they got chance to express their views on their ward development whereas some of them got chance to raise the common problems faced by the public and to work for the women welfare. However, no visible trend was found among Councillor respondents.

On the basis of Age, it was evident that 54.6 per cent of the respondents with age above 45 years, stated that they got advantage to express their views on city development as against 27.2 per cent of the respondents with age below 45 years. The responses of the respondents with age below 45 years were not indicating any clear trend as 27.2 per cent of the respondents got chance to whereas 36.3 per cent of respondents got chance to meet the demand of their area.

**FINDINGS:** More of women representatives opined that they got chance to express their view on city development through participating in MCs. However, no visible trend was found among women representatives.

**TABLE 8.1: HOW FREQUENTLY DO YOU ATTEND THE MEETINGS OF THE MUNICIPAL CORPORATION?**

Attribute/ Responses	Ranks	Regularly	Occasionally	Rarely	Never
<b>Position in MC</b>	<b>Mayor</b>	6 (100.0)	- (00.0)	- (00.0)	- (00.0)

	<b>Councillor</b>	15 (93.8)	- (00.0)	- (00.0)	1 (6.2)
<b>Age</b>	<b>Below 45 years</b>	10 (90.9)	- (00.0)	- (00.0)	1 (9.1)
	<b>Above 45 years</b>	11 (100.0)	- (00.0)	- (00.0)	- (00.0)

Source: Computed from Primary Data.

On assessing the data presented in the Table 8.1, it was found that cent per cent of respondents regularly attended the meetings of MCs as against 93.8 per cent of the Councillors. Only one respondent highlighted that she never attended the meetings and her husband attended the meetings on her behalf.

Similarly on the basis of Age, it was evident that cent per cent of respondents with age above 45 years stated that they regularly attended the meetings of MCs as against 90.9 per cent of respondents in the age group of below 45 years.

**FINDINGS:** Higher proportion of women representatives opined that they regularly attended the meetings of MCs. Only one respondent highlighted that she never attended the meetings and her husband attended the meetings on her behalf.

**TABLE 9.1: WHAT ARE YOUR OBSTACLES IN ATTENDING THE MEETING OF THE MUNICIPAL CORPORATION?**

<b>Attribute/ Responses</b>	<b>Ranks</b>	<b>Domestic work</b>	<b>Male dominance</b>	<b>Negative attitude of males</b>	<b>None of these</b>
<b>Position in MC</b>	<b>Mayor</b>	- (00.0)	- (00.0)	2 (33.3)	4 (66.7)
	<b>Councillor</b>	5 (31.2)	1 (6.2)	4 (25.0)	6 (37.5)
<b>Age</b>	<b>Below 45 years</b>	3 (27.2)	- (00.0)	4 (36.3)	4 (36.3)
	<b>Above 45 years</b>	2 (18.2)	1 (9.1)	2 (18.2)	6 (54.6)

Source: Computed from Primary Data.

On analyzing the presented data in the Table9.1, it was found that 66.7 per cent of the Mayor respondents felt no obstacle in attending the meeting of MCs as against 37.5 per cent of the Councillor respondents. The responses of the Councillors were not indicating any clear trend as 31.2 per cent of Councillor respondents felt domestic work as an obstacle whereas 25 per cent of them

felt negative attitude of male and only one respondent felt male dominance as an obstacle in attending the meeting of MCs.

On the basis of Age, it could be ascertained that 54.6 per cent of respondent with age above 45 years felt no obstacle as against 36.3 per cent of respondent with age below 45 years. However, visibly no clear trend was found in the age variable.

**FINDINGS:** More of women representatives opined that they felt no obstacle in attending the meetings of MCs whereas some of them felt negative attitude of male as an obstacle in attending the meetings of MCs.

**TABLE 10.1: HOW FREQUENTLY DO YOU SPEAK IN THE MEETINGS?**

Attribute/ Responses	Ranks	Very Frequently	Frequently	Rarely	Never
<b>Position in MC</b>	<b>Mayor</b>	4 (66.7)	2 (33.3)	- (00.0)	- (00.0)
	<b>Councillor</b>	7 (43.8)	8 (50.0)	1 (6.2)	- (00.0)
<b>Age</b>	<b>Below 45 years</b>	6 (54.6)	5 (45.4)	- (00.0)	- (00.0)
	<b>Above 45 years</b>	5 (45.4)	5 (45.4)	1 (9.1)	- (00.0)

Source: Computed from Primary Data.

On assessing the data presented in the Table 10.1, it was ascertained that majority of the Mayor respondents, 66.7 per cent spoke very frequently in the meetings as against 43.8 per cent of Councillor respondents. Some of the respondents stated that they spoke frequently or rarely in the meetings.

On the basis of Age, it was evident that 54.6 per cent of the respondent with age group below 45 years spoke very frequently in the meeting as against 45.4 per cent of the respondent with age group above 45 years. However, no respondent stated that she never spoke in the meeting.

**FINDINGS:** More of women representatives expressed that they spoke very frequently or frequently in the meetings. Interestingly, no respondent stated that they never spoke in the meetings.

### **FINDINGS OF THE STUDY**

1. More of women representatives opined that they were inspired to contest elections at higher level.
2. Higher proportion of women representatives opined that media as a source of getting information on development programmes/schemes.

3. Higher proportion of women respondents considered that being a woman was a handicap to some extent only in their efforts to solve the issues and problems.
4. Higher proportion of women representatives expressed that people contacted them very often or often with their problem.
5. Higher proportion of women representatives found significant change or slight change in their social status.
6. Higher proportion of women representatives revealed that they were consulted very often by fellow corporation respondents in planning and implementing of urban development plans of their areas.
7. More of women representatives opined that they got chance to express their view on city development through participating in MCs.
8. Higher proportion of women representatives opined that they regularly attended the meetings of MCs.
9. More of women representatives opined that they felt no obstacle in attending the meetings of MCs.
10. More of women representatives expressed that they spoke very frequently or frequently in the meetings.

## **RECOMMENDATIONS**

1. The women leaders need to be made aware of the rules and procedures related to the functioning of MCs through awareness camps, workshop, seminars, training programmes etc.
2. There is need to encourage women participation in politics, political parties and other women related organizations should take a lead role; especially the political parties should take effective measures to ensure women's presence at various organizational and decision-making levels.
3. Women representatives need to be well informed about various developmental policies and programmes by disseminating necessary information. Education, awareness and training on politics, legislations and day-to-day rules and procedures and processes prevailing at the local level are necessary towards the direction of women empowerment. It will be unfortunate if the elected women representatives do not know what to do to solve the problem they encounter in their area.
4. Women leaders in MCs should be made aware of financial matters relating to MCs such as advancing of loans, sanctioning of the projects, purchasing of land related implements and supplements through orientation programmes launched by the government and other funding agencies viz., banks, NGOs and development agencies.

## **CONCLUSIONS**

The present study has shown trends of change in the women representatives' pattern in Municipal Corporation, Chandigarh. Before the enforcement of the Municipal Corporation Act, 1992, the women representatives' pattern in the city was only confined to the limited senior section of women, in the society. The 33 per cent reservation, as enshrined in the Act, has thrown open the arena to



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more number of women, thereby providing them enough opportunity to prove their leadership metal and come out of the age old second ranking in the social milieu.



## ADMINISTRATIVE SET-UP OF ELECTRICITY IN HARYANA

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### ABSTRACT

*With the introduction of the new economic policy in India since 1991, the power sector was the first public sector industry where reforms were attempted.<sup>1</sup> The Electricity Regulatory Commission Act, 1998 and Electricity Act of 2003 manage all the affairs relating to electricity namely, generation, transmission, distribution, tariff, and subsidies etc<sup>2</sup>*

### INTRODUCTION

With the introduction of the new economic policy in India since 1991, the power sector was the first public sector industry where reforms were attempted.<sup>3</sup> The Electricity Regulatory Commission Act, 1998 and Electricity Act of 2003 manage all the affairs relating to electricity namely, generation, transmission, distribution, tariff, and subsidies etc.<sup>4</sup>

Haryana is the second state after Orissa to undertake power sector reforms. The objectives of the power sector reforms in Haryana like other states, are to restore reliability and credit worthiness of the power industry and to create an environment to attract private investment, promote competition and efficiency, and facilitate sustainable development of the power sector in the state.

The restructuring programme aimed at restoring financial viability of power utilities so that, the state government is relieved of the burden of providing subsidies to cover their losses and to make the power sector a generator of net resources for the state and capable of arranging its investment requirements on its own strength.

### HARYANA ELECTRICITY REGULATORY COMMISSION

In order to achieve the objectives of power sector reforms, the State Assembly passed “The Haryana Electricity Reform Bill, 1997”. Consequently, “The Haryana State Electricity Reforms Act, 1997” was notified by the state government on March 10, 1998 and made effective from August 14, 1998.<sup>5</sup> The Act has provided for constitution of an Electricity Regulatory Commission, which was

constituted on August 17, 1998 and entrusted with the responsibility to regulate electricity affairs in general. The specific functions of the commission <sup>6</sup>are:

- a) to determine the tariff including wheeling charges and surcharges for generation, supply, and transmission;
- (b) to regulate electricity purchase, procurement process of distribution licensees (including the price at which electricity is procured from the generating companies or licensees or from other sources through agreements for purchase of power) for distribution and supply of electricity;
- (c) to facilitate intra-state transmission and wheeling of electricity;
- (d) to issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the state;
- (e) promoting cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person;
- (f) adjudicate upon matters relating to the disputes between the licensees and generating companies, and to refer any dispute for arbitration;
- (g) levying fee on the concerned entities as provided in the Act;
- (h) specify matters pertaining to Grid codes specification;
- (i) enforcing standards with respect to quality, continuity, and reliability of service to be ensured by licensees;
- (j) deciding the norms for intra state trading of electricity;
- (k) The commission is responsible for discharging any other function entrusted to it, consequent, upon the enactment of Haryana State Electricity Reforms Act, 1998.

In addition to the above stated functions, the commission is also entrusted with the responsibility to advise the state government pertaining to following matters:

- (i) Promotion of competition, efficiency, and economy in activities of the electricity industry;
- (ii) promotion of investment in electricity industry;
- (iii) reorganization and restructuring of electricity industry in the state;
- (iv) matters concerning generation, transmission , distribution and trading of electricity or any other matter referred by the government.

In addition to the above, the functions of the commission as per the Haryana Electricity Reform Act, 1997 are the following:

- (a) To regulate the working of the licensees and to promote their working in an efficient, economical and equitable manner;

- (b) to promote efficiency, economy, and safety in the use of the electricity in the state and in particular, in regard to quality, continuity, and reliability of service and enable all reasonable demands for electricity to be met;
- (c) to regulate the purchase, distribution, supply and utilization of electricity, the quality of service, the tariff and charges payable keeping in view both the interest of the consumers as well as the consideration that the supply and distribution cannot be maintained unless the charges for the electricity supplied are adequately levied and duly collected;
- (d) to promote competitiveness and progressively involve the participation of private sector, while ensuring fair deal to the customers;
- (e) to collect data and forecast on the demand and use of electricity and to require the licensees to collect such data and forecast;
- (f) to require licensees to formulate perspective plans and schemes in coordination with others for the promotion of generation, transmission, distribution and supply of electricity;
- (g) to set appropriate code of conduct and standards for the electricity industry in the state;
- (h) to regulate the assets, properties and interest in properties concerning or related to the electricity industry in the state; and
- (i) to undertake all incidental or ancillary things.

### **POWERS OF THE COMMISSION**

The Commission is endowed with suitable powers and authority to discharge its responsibilities. It is vested with civil courts power for<sup>7</sup> :

- (a) summoning and enforcing the attendance of any person and examining him on oath;
- (b) discovery and production of any document or other material object producible as evidence;
- (c) receiving evidence on affidavits;
- (d) requisitioning of any public record;
- (e) issuing commission for the examination of witnesses;
- (f) reviewing its decisions, directions and orders; and
- (g) any other matter prescribed for the purpose.

The commission has the power to pass interim order and can authorise any person, as it deems fit, to represent the interest of the consumers in the proceedings before it. Besides, the commission can authorize an officer of gazetted rank to investigate, examine and search a place, document or record required in its opinion for discharging its responsibilities.

### **ORGANISATION**

Haryana Electricity Regulatory Commission (HERC) is a multimember body and comprises of three members including the Chairperson. The members are appointed by the state government on the recommendation of a selection committee comprising of<sup>8</sup>:

- (i) The Vice Chancellor of a Haryana University – Chairperson;
- (ii) a Member of Haryana Public Service Commission – Member;
- (iii) the Chairman or a Member of Central Electricity Authority – Member;
- (iv) the Secretary in charge of Finance Department, Government of Haryana – Member; and
- (v) the Secretary in charge of the Power Department, Government of Haryana – Member.

The Secretary in charge of the Department of Power, Government of Haryana, convenes the meeting of the committee and the committee after deliberation sends names of two suitable persons for each vacancy in the commission. The state government decides and appoints one of the two candidates so short-listed by selection committee.

The senior most member of the commission is entrusted with the responsibility of the Chairman. It is also expected that members to be appointed in the commission should possess the adequate knowledge or experience of law, engineering, economics, commerce, finance, accountancy, and administration.<sup>9</sup>

The tenure for the member of the commission is fixed as five years or until the age of sixty-five years whichever is earlier. A person who has attained the age of 62 years can't be appointed as member of the commission. It is expected that person appointed in the commission may serve for at least three years. The re-appointment of the member is forbidden according to the Act. Similarly, the Governor lays down the conditions in the Act for removing a member from the office. Thus, there is an explicit attempt to compose the commission so that it can discharge its responsibility in professional manner.

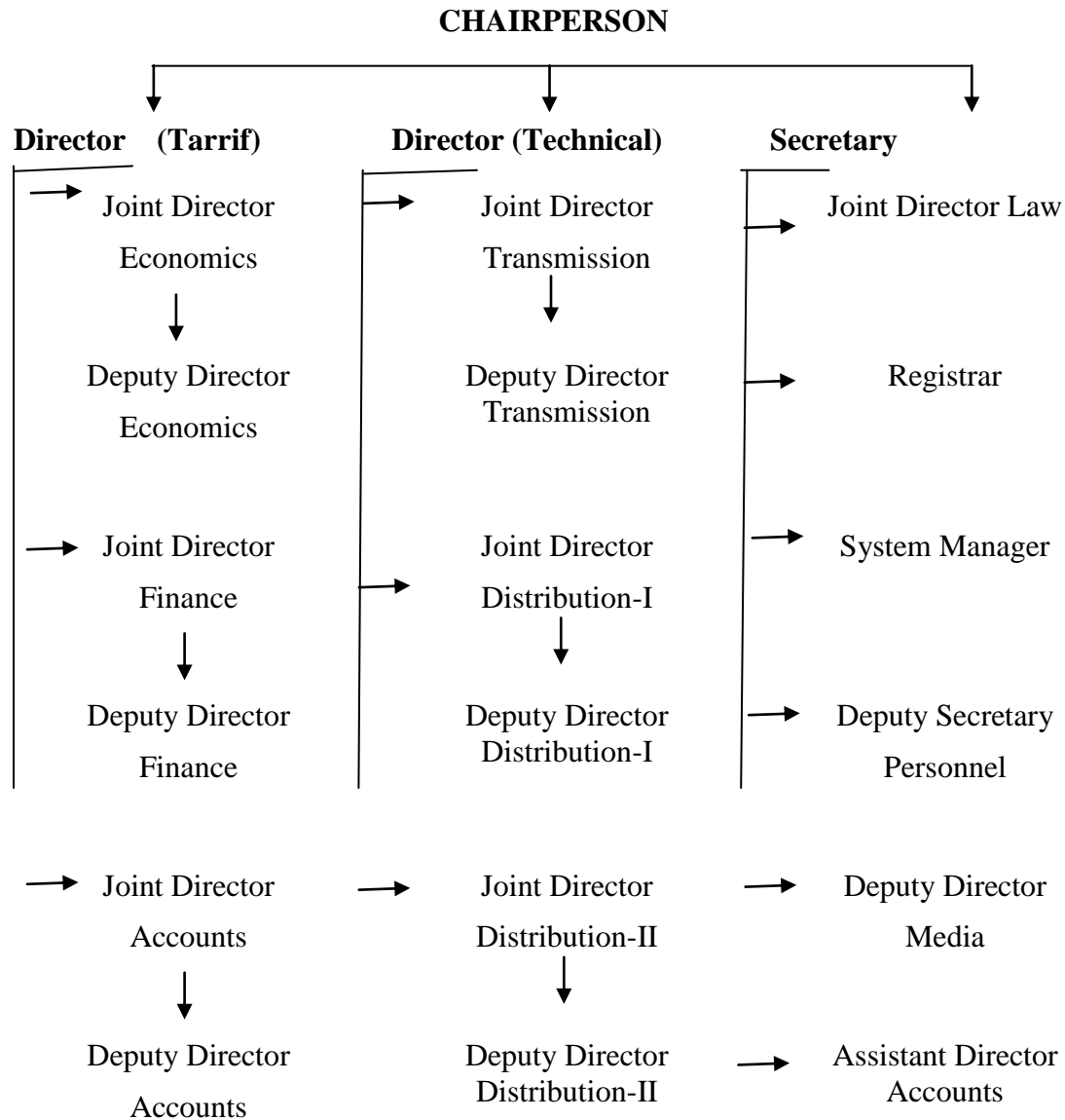
The Governor of the State may remove from office any member of commission,<sup>10</sup> who

- (a) has been adjudged an insolvent; or
- (b) has been convicted of an offence involving moral turpitude; or
- (c) has become physically or mentally incapable of acting as such member; or
- (d) has without reasonable cause refused or fail to act for a period of at least six months; or
- (e) ceases to fulfill any of the conditions of his appointment as member; or
- (f) has acquired such financial or other interest that can affect prejudicially his functions as a member.

## ORGANISATION CHART

The organisational chart further indicates that the commission is a body of experts and strives for making the power sector in the state (both public and private) to run in a rational manner. The organisational chart is as under:



**FIGURE 3.1 ORGANISATIONAL CHART, HERC****HARYANA POWER GENERATION CORPORATION LIMITED (HPGCL)**

The erstwhile Haryana State Electricity Board was unbundled into two corporate bodies namely, Haryana Power Generation Corporation Limited (HPGCL) for the generation of power and Haryana Vidyut Prasaran Nigam Limited (HVPNL) for the transmission of power. HVPNL has been further divided into Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) and Dakshin Haryana Bijli Vitran Nigam Limited (DHBVNL) to look after distribution of electricity in northern and southern parts of the state, respectively.

Haryana Power Generation Corporation Limited (HPGCL) was incorporated as a company under Companies Act, 1956 on March 17, 1997. The business of the generation of power of erstwhile Haryana State Electricity Board was transferred to Haryana Power Generation Corporation Limited on August 14, 1998, pursuant to the implementation of power reforms in the State of Haryana. The main objective of the HPGCL is to generate power in the state of Haryana from the existing generating stations in most efficient manner on commercial lines and sell whole of the power generated exclusively to the HVPNL and to set up new power projects in the state sector. Besides, HPGCL is also entrusted with the responsibility of undertaking the trading and procurement of power on long term and short-term basis and signing of power purchase agreement with power producers/traders since June 2005. Thus, it has acquired both production and trading business like a private industrial undertaking.

#### **TOTAL GENERATING CAPACITY AVAILABLE WITH THE STATE :**

At present, the total installed generation capacity available in the state of Haryana is 4068.01 MW. Out of this 1587.4 MW is located within the state at the thermal power stations in Panipat, and Faridabad; and hydro-electric station at Yamuna Nagar as per the detail given below.<sup>11</sup>

**TABLE 3.1 TOTAL GENERATING CAPACITY IN HARYANA**

<b>Sr. No.</b>	<b>Name of Power Station</b>	<b>Capacity (MW) &amp; Unit No.</b>	<b>Date of Commissioning</b>
<b>I</b>	<b>Faridabad Thermal Power Station</b>	55 MW Unit-1	22.11.1974
		55 MW Unit-2	06.03.1976
		55 MW Unit-3	01.04.1981
<b>ii.</b>	<b>Thermal Power Station, Panipat</b>		
	Stage-I	110MW Unit-1	01.11.1979
		110MW Unit-2	27.03.1980
	Stage-II	110MW Unit-3	01.11.1985
		110MW Unit-4	11.01.1987
	Stage-III	210MW Unit-5	28.03.1989
	Stage-IV	210 MW Unit-6	31.03.2001
	Stage-V	250 MW Unit-7	28.09.2004
	Stage-VI	250 MW Unit-8	28.01.2005

iii.	<b>WYC Hydro Electric Station, Yamuna Nagar</b>		
	Power House A	8MW Unit-1	29.05.1986
		8MW Unit-2	13.06.1986
	Power House B	8MW Unit-1	15.05.1987
		8MW Unit-2	01.06.1987
	Power House C	8MW Unit-1	27.03.1989
		8MW Unit-2	18.04.1989
	Power House D	7.2 MW Unit-1	16.04.2004
		7.2 MW Unit-2	12.05.2004
	iv. <b>Deen Bandhu Chhotu Ram Thermal Power Project, Yamuna Nagar</b>	300 MW Unit-1	14.04.2008
		300 MW Unit-2	24.06.2008
	<b>TOTAL:</b>	<b>2187.4 MW</b>	

The demand of Haryana is increasing exponentially at the rate more than 14.0 percent per year on the account of high consumption in industrialization and agriculture sector. The power availability from above mentioned projects is not sufficient to meet the demand of the state particularly, during peak season of paddy and Rabi crops. As such, HPGCL has to resort to short-term power purchase and planning of long-term power arrangements, such as holding share in joint projects of states and in central generating projects.

The details of the installed and contracted generation capacity from various projects and Haryana's share in mega watt (MW) is as under<sup>12</sup>:

**TABLE 3.2 INSTALLED AND CONTRACTED GENERATION CAPACITY IN HARYANA**

	Source	Installed Capacity (MW)	Haryana's Share (MW)
<b>(A)</b>	<b>Haryana's own Generating stations</b>		
	Faridabad Thermal Power Station	165	165
	Panipat Thermal Power Station, Panipat	1360	1360
	WYC Hydel Project, Yamuna Nagar	62.7	62.7
	Deenbandhu Chhotu Ram Thermal Power Station Yamuna Nagar	600	600
	Sub Total (A)	<b>2187.7</b>	<b>2187.7</b>
<b>(B)</b>	<b>Share in Joint Projects</b>		
	Bhakra-Nangal Complex	1490	492
	Dehar Power Plant	990	317
	Pong Power Plant	396	66
	I.P. Thermal Station Delhi	187.5	62.5
	Sub Total (B)	<b>3063.5</b>	<b>937.5</b>
<b>I</b>	<b>Share in Central Generating Projects</b>		
	Baira-Siul Hydel Project	198	54.9
	Salal Hydro-Elect Project Stage-I	345	104
	Salal Hydro-Elect Project Stage-II	345	--
	Tanakpur Hydel	94.2	6
	Chamera Hydel	540	85
	Chamera-II	300	17
	Uri Hydel	480	26

	Dhauili Ganga	280	16
	Dhulhasti	390	21
	Tehri Hydel	1000	43
	Singrauli Super Thermal Project	2000	200
	Rihand Super Thermal Project-I	1000	65
	Rihand Super Thermal Project-II	1000	57
	Unchahar Super Thermal	840	34
	Unchahar-III	210	12
	Anta Gas	419.33	25.3
	Auriya Gas	663.36	38.2
	Dadri Gas	829.58	40.6
	Faridabad Gas	432	432
	Narora Atomic	440	28.1
	RAPP stage B-4	220	48
	NJPC	1500	65
	Tala/Hydro	1030	14.99
	Farakha	1600	29.76
	Kahalgaon	840	66.91
	<b>Sub Total (C)</b>	<b>16996.47</b>	<b>1529.76</b>
<b>(D)</b>	<b>Independent Private Power Projects &amp; Purchases</b>		
	Magnum International Power	25	25
	<b>Sub Total (D)</b>	<b>25</b>	<b>25</b>



	<b>Total Installed Capacity available (A+B+C+D)</b>	<b>22272.67</b>	<b>4679.96</b>
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### CAPACITY ADDITIONS

Power infrastructure is an essential infrastructure for the prosperity of the state. In pursuance of this objective, state government has always been looking for every opportunity to increase generation. The state government attached importance to this sector is visible from the given table, which shows the current availability of power and expected demand from different sources in the Eleventh Five Year Plan.

**TABLE 3.3 YEARLY CAPACITY ADDITION SCENARIO-TILL THE END OF 11<sup>TH</sup> PLAN**

Sources of installed capacity	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
State Owned Projects	1587.7	1587.7	1587.7	1587.7	1587.7	1587.7
Central Sector Share	1518.11	1518.11	1518.11	1518.11	1518.11	1518.11
Shared Projects - BBMB & IP	937.5	937.5	937.5	937.5	937.5	937.5
DCRTPP Yamuna Nagar	-	600	600	600	600	600
Hisar TPS (600X2) Mega Plant Status (10% Power sale in other state)	-	-	1080	1080	1080	1080
Jhajjar Case- II =1320 MW(10% Power sale in other state)	-	-	-	-	1188	1188
Aravali STPS,Jhajjar (500*3){Haryana:Delhi - 50:50}	-	-	-	750	750	750
Additional availability through PPA with IPPs/CPSU	25	147.5	731	1059	1926	5965
Yamuna Nagar Extention	-	-	-	300	300	300
Faridabad Gas	-	-	-	-	-	432
<b>Total Capacity (MW)</b>	<b>4068.31</b>	<b>4790.36</b>	<b>6454.31</b>	<b>7832.31</b>	<b>9887.31</b>	<b>14358.3</b>

<b>Total Available Capacity (at 80% PLF)</b>	<b>3254.65</b>	<b>3832.29</b>	<b>5163.45</b>	<b>6265.85</b>	<b>7909.85</b>	<b>11486.6</b>
<b>Total Demand (at 14% Growth)</b>	<b>6434</b>	<b>7335</b>	<b>8362</b>	<b>9533</b>	<b>10867</b>	<b>12388.4</b>

### **HARYANA VIDYUT PRASARAN NIGAM LIMITED (HVPNL)**

After restructuring of state power sector on August 14, 1998, the HVPNL was entrusted with the power transmission and distribution functions. The main objectives of the HVPNL are planning, designing, construction, erection and maintenance of transmission lines, sub-stations of voltage level 66 KV and above and providing communication facilities.

It is also responsible for maintaining an integrated and efficient power transmission system network and wheeling of power in accordance with the policies, guidelines laid down by the state government and Haryana Electricity Regulatory Commission (HERC) from time to time.

Consequently, HVPNL is entrusted with the following responsibilities:

- (i) Monitoring and maintaining grid discipline and resolve grid issue.
- (ii) Resourcing funds for plan implementation.
- (iii) Augmenting and strengthening power transmission capability consistent with requirements.
- (iv) Acting as State Transmission Utility.
- (v) Ensuring adequate, safe and economical transmission of electricity with regard to quality, availability, and reliability of services.

### **UTTAR HARYANA BIJLI VITRAN NIGAM LIMITED (UHBVNL) AND DAKSHIN HARYANA BIJLI VITRAN NIGAM LIMITED (DHBVNL)**

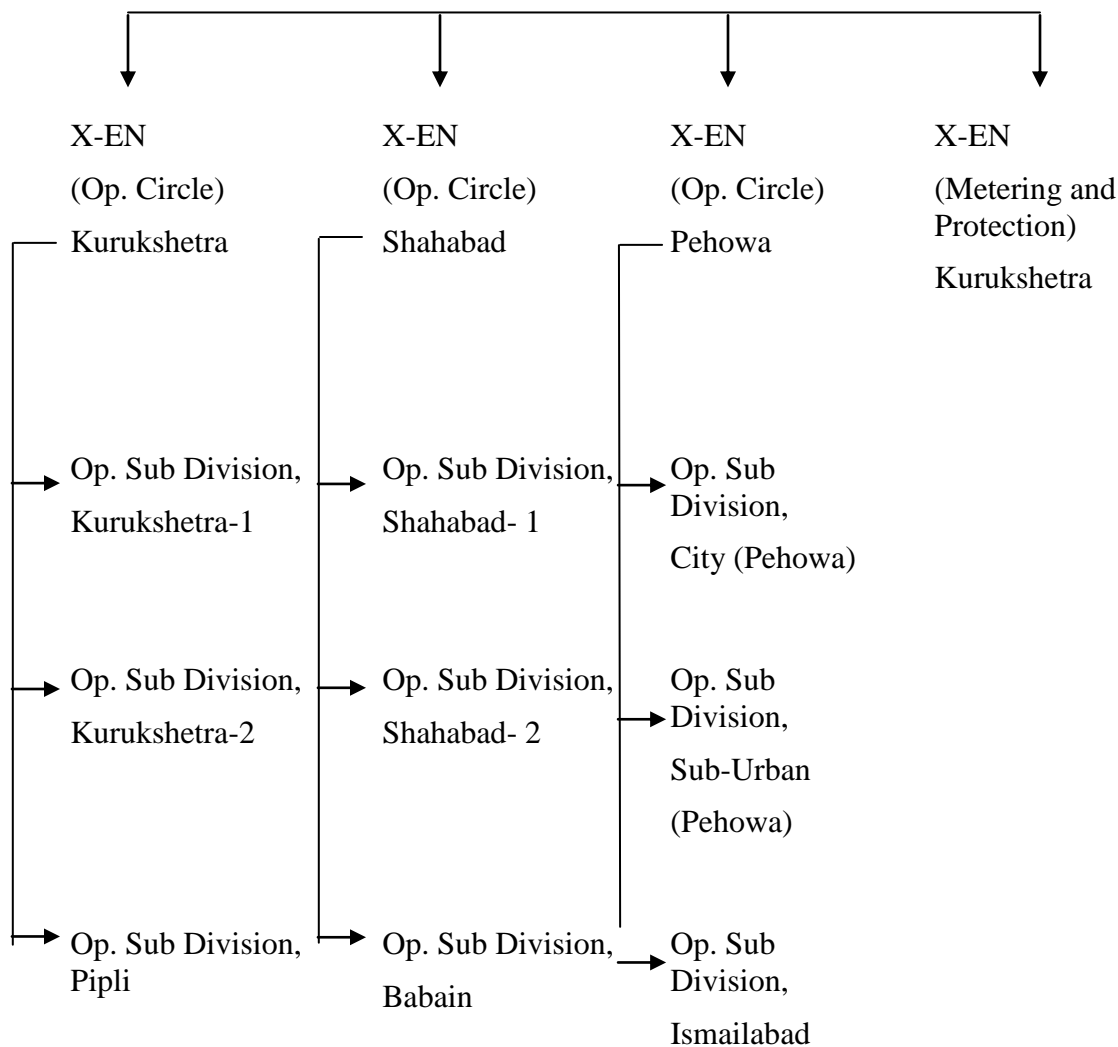
The State power sector was restructured on August 14, 1998. The Haryana State Electricity Board (HSEB) was reorganised initially into two state-owned corporations namely Haryana Vidyut Prasaran Nigam Limited (HVPNL) and Haryana Power Generation Corporation Limited (HPGCL). HPGCL was made responsible for operation and maintenance of state's own power generating stations. HVPNL was entrusted the power transmission and distribution functions.

HVPNL was further reorganized on July 1, 1999 by carving out two more corporations, namely Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) and Dakshin Haryana Bijli Vitran Nigam Limited (DHBVNL) with the responsibility of distribution and retail supply of power within their jurisdiction. While UHBVNL is responsible for Panchkula, Ambala, Yamunanagar, Kurukshetra, Kaithal, Karnal, Panipat, Sonapat, Rohtak, Jhajjar and Jind districts; and DHBVNL caters to Hisar, Fatehabad, Bhiwani, Sirsa, Faridabad, Gurgaon, Mewat, Rewari and Narnaul districts.

UHBVNL and DHBVNL are dedicated to serve masses by extending reliable, quality, uninterrupted, safe and clean power to consumers at affordable tariff to boost agriculture, industrial and economic development in Haryana. These focuses on augmentation, renovation and modernization of existing distribution system; expansion of distribution network; and preventive maintenance of distribution system. These utilities focuses on:

- (a) To bring down line losses;
- (b) to bring improvement in collection efficiency;
- (c) to bring transparency and integrity in actions to achieve higher level of consumer satisfaction;
- (d) to encourage and support energy saving activities and demand side management optimizing the use of electricity;
- (e) to bring modernization in management to bring about cost effectiveness and efficiency in functioning; and
- (f) to realizes inherent potential in new technology, particularly, information technology, for improving efficiency, accounting, information level and consumer satisfaction.

**FIGURE 3.4 ORGANIZATIONAL CHART OF SUPERINTENDING ENGINEER  
(OPERATIONAL CIRCLE) KURUKSHETRA**



→ Op. Sub Division, → Op. Sub Division,  
Ladwa Ajrana Kalan

### STATE ADVISORY COMMITTEE

The Commission has also established a State Advisory Committee consisting of not more than fifteen members to represent the interests of commerce, industry, transport, agriculture, labour, consumers, non-governmental organisations and academics and research bodies in the electricity sector. There is representation of member of commission and some ministries and departments of the state government.<sup>13</sup>

The objectives of the State Advisory Committee are to advise the Commission on –

- (i) major questions of policy;
- (ii) matters relating to quality, continuity, and extent of service provided by the licensees;
- (iii) compliance by licensees with the conditions and requirements of their licence; and
- (iv) protection of consumers' interest.

### TARIFF PHILOSOPHY

The commission and State Advisory Committee prepare the tariff policy naturally, as per the philosophy of the state. It means the commission is independent but works within the broader framework determined by the political ideology of the country and state.

In order to achieve the above-mentioned objectives, the commission approaches the tariff issues from the consumers as well as the regulated utilities point of view, so as to ensure safeguarding of consumers interest and at the same time, recovery of the cost of electricity in a reasonable manner. All these are set in the perspective of the Electricity Act, 2003.<sup>14</sup>

### TECHNICAL AND NON-TECHNICAL LOSSES

In pursuance of the objective of promoting productive and allocative efficiency, reduction of technical and non-technical losses assumes prime significance. The Commission considers the existing losses to be significantly high. In this regard, commission recommended various organizational, managerial, technical, motivational and administrative measures to the power utilities.

### SUBSIDIES AND CROSS SUBSIDIES

The prevailing levels of electricity tariff in Haryana contain a large degree of subsidy and cross subsidy, with some categories of consumers paying well above the economic cost of supply. It has to be recognised that low and subsidised tariff initiate inefficient high demand for power, which puts pressure on the system capacity and the quality of service. Therefore, in order to improve the financial health of the sector as well as promote efficiency and economy in the use of resources, the

commission takes steps to initiate elimination of cross-subsidies. While doing so, the commission also addressed the social and political objectives of subsidies and crossed subsidies.

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## FARMERS SUICIDE IN INDIA

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### ABSTRACT

*Farmers in India have committed suicide in large number in the past twenty years or so. There are differences of opinions among the policy makers, the agricultural experts and environmentalists on what were the causes for this crisis. Some say that the seeds of this crisis were sown during the period of Green Revolution itself and therefore it is mainly policy driven.*

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### INTRODUCTION

Farmers in India have committed suicide in large number in the past twenty years or so. There are differences of opinions among the policy makers, the agricultural experts and environmentalists on what were the causes for this crisis. Some say that the seeds of this crisis were sown during the period of Green Revolution itself and therefore it is mainly policy driven. There are others who say that it is because of the vagaries of the market and some others who hold environmental degradation to be the major cause.

Iyer and Manick (2000) make a useful distinction between “causative” and “precipitative” factors which push farmers to take this extreme step saying that while the precipitant factors could be social and psychological, the causative factors were economic (primarily indebtedness).

### CAUSES OF FARMERS SUICIDE

Various reasons have been offered to explain why farmers commit suicide in India, including: drought, debt, use of genetically modified seed, public health and government economic policies. There is no consensus on what the main causes might be but studies show suicide victims are



motivated by more than one cause, on average three or more causes for committing suicide. Some of them are:

**AN ADDICTED:** While investigation of farmer suicide behind the cause, basic cause is sociological. According to the G. K. Diresh committee Karnataka government farmer taking loan purpose of drinking wine and enjoyment and committed suicide. But another reason is farmer get loan for the marriage and festival and they become bankrupt and commit suicide. This analysis is not wrong this is the basic cause of farmer suicide. Need of investigation of the social science, and discussion of the theory of suicide.

**ECONOMICAL AND SOCIOLOGICAL INEQUALITY OF INDIAN FORM SOCIETY:** After the freedom Act of Reform land by government try to increase inequality in economic and sociological in farm society. 82% small farmers but doing farm only 36% Second side 60% land lord 40% authority on the land. After freedom government reform act of land maintain equality in the economical and social inequality.

**POLITICAL INDIFFERENCE:** Political indifference is the cause of farmer suicide. According to Dhanagare sez's government institutional creating one types of political class. Political class become powerful by the government institution political in difference creating political class that why they don't think about farmers fever economical things.

**WORKING POWER OF BANK AND CHANGE OF AGRICULTURE MARKET:** Economical and political weekly (EPW) According to study of divisional state and district in 1972 and 2003 about the farmers loan commercial bank decrease. Scheduled commercial bank (SCBE) loan of farm only 27.74 million march 1992 to 20.74 millions this things seen till the 2003. According to the Shreejeet Mishra is study rural area schedule commercial bank going to decrease and also loan of farm. The only way of loan is rural government bank provided the loan of farmers? Small class farmer did not get the agricultural loan because the land lords political power opposite Sahakari Society and Bank and on the division creating power of land lord.

**NEW ECONOMICAL POLICY:** Indian Farmer participates in world market because of new economical policy. One side increase the dept. and agricultural medicine is unavailable so many causes he going to bankrupt. Developed and in developed country creating inequality in this business by word business group developed country creating power on the word business group. That why in developed effect on the developed farmer.

**DROUGHT:** As much as 80% of India's farmland relies on flooding during monsoon season, so inadequate rainfall can cause droughts, making crop failure more common. In regions that have experienced droughts, crop yields have declined, and food for cattle has become scarcer. Agricultural regions that have been affected by droughts have subsequently seen their suicide rates increase.

**GM CROPS:** A number of social activist groups and studies proposed a link between GM crops and farmer suicides. Bt cotton (*Bacillus thuringiensis* cotton) was claimed to be responsible for farmer suicides. The Bt cotton seeds cost nearly twice as much as ordinary ones. The higher costs forced many farmers into taking ever larger loans, often from private moneylenders charging exorbitant interest rates (60% a year). The moneylender was claimed to collect his dues at harvest time, by compelling farmers to sell their cotton to him at a price lower than it fetches on the market.

According to activists, this created a source of debt and economic stress, ultimately suicides, among farmers. Scholars claim that this Bt cotton theory made certain assumptions and ignored field reality.

### **INTERNATIONAL COMPARISON**

Farmer's suicide is a global phenomenon. Outside India, studies in Sri Lanka, USA, Canada, England and Australia have identified farming as a high stress profession that is associated with a high suicide rate than in general population. This is particularly true among small scale farmers and after periods of economic distress. Fraser et al., similarly after a review of 52 scholarly publications, conclude that farming populations in the United Kingdom, Europe, Australia, Canada and the United States have the highest rates of suicide of any industry and there is growing evidence that those involved in farming are at higher risk of developing mental health problems. Their review claims a wide range of reasons behind farmer's suicide globally including mental health issues, physical environment, family problems, economic stress and uncertainties. Significantly higher suicide rate among farmers than general population have been reported in the developed countries such as UK and USA.

### **RECOMMENDATIONS**

Following are some suggestions and recommendations to alleviate the present situation.

- To sustain the family of the deceased, all the financial help should be provided as 'Fixed Deposit' in the bank, with quarterly payment of interest.
- A comprehensive Agricultural Insurance Scheme should be launched. Specific attention should be given to cover cash crops – like cotton, sugarcane and edible oils.
- Organic farming should be promoted to avoid or minimise the cost of pesticides and fertilisers.
- Biodiversity must be the basis of production to reduce vulnerability to climate and markets.
- Strongest action under Indian Penal Code should be taken against suppliers and manufactures of spurious pesticides.
- Likewise, the suppliers of spurious/inferior seeds must be punished.
- Seed supply must be maintained as a public good to protect farmers' rights.
- Integrated Pest Management (IPM) should be popularised among farmers.
- Institutionalised Credit System to the farmers must be simplified.
- Moneylenders charging the exorbitant rate of interest must be punished.
- Gram Panchayats should evolve a mechanism to identify the indebted and suicide prone farmers and help them to overcome the crisis.
- Extension agencies with a vision of eco-friendly sustainable development should guide the farmers to make the efficient use of water, electricity, pesticide and other inputs.
- The role of commission agents, traders and intermediaries should be minimized to facilitate the farmers to fetch maximum price of their produce.
- Agriculture policy needs to shift from its current bias of 'corporate first' to 'farmers first'.

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## ACHIEVEMENTS OF INDIA SO FAR

These lessons other countries can learn from India.

**(A) GREEN REVOLUTION AND SMALL FARMS:** India's green revolution which started in the mid-1960s heralded a new era in Indian agriculture. The cultivation of high yielding varieties of seeds at recommended dosages of fertilizers were encouraged in water assured areas. Initially, the medium and large farmers in irrigated areas benefited from the new technology. However, small holding agriculture also benefited from green revolution because of government support in accessing services.

**(B) FOOD GRAINS MANAGEMENT:** The food grains management policy of India consists of three instruments: (a) minimum support prices and procurement; (b) buffer stock and (c) public distribution system. During 2006-08, there were significant increase in global food prices of rice and wheat. In the case of India, food grain prices increased only around 10 per cent as compared to global food price increase of 80 to 90 per cent. Food grain management is partly responsible for insulation from the rise of global food grain prices. Small and marginal farmers also benefited from these policies.

**(C) DAIRY COOPERATIVES:** Other countries can learn from the dairy cooperatives in India. The country's dairy sector is dominated by smallholders, and contracting with a large number of them involves transaction costs for the processors. The processors do not have much choice but to take milk from smallholder producers. The problem of the higher cost of contracting with small producers is overcome by contracting with a single person in the village often an agent who acts as an intermediary between the processor and producers (Birthal et al, 2008).

National Dairy Development Board covers 1,40,227 village level societies and 14 million farm families of which 4 million are women. It has a daily procurement of 22 million liters of milk<sup>8</sup>. Amul Pattern of dairy cooperatives have contributed immensely to the fact that India has progressed from a milk-deficit country to emerge as the largest milk-producing nation in the world. In the process, they have generated millions of days of employment for the rural poor and improved their socio-economic conditions.

**(D) WATER MANAGEMENT IN GUJARAT:** The government of Gujarat played an important role in the Gujarat miracle for agriculture in 2000s. Gujarat has recorded high and steady growth at 9.6% per year in agricultural state domestic product since 1999-2000. What are the factors responsible for this high growth? According to Shah et al (2009), "the Gujarat government has aggressively pursued an innovative agriculture development programme by liberalizing markets, inviting private capital, reinventing agricultural extension, improving roads and other infrastructure". If it is only canal irrigation, high growth should have been mainly in South and Central Gujarat. However, the evidence shows that dry Saurashtra and Kachchh, and North Gujarat that have been at the forefront. "These could not have performed so well but for the improved availability of groundwater for irrigation. Arguably, mass-based water harvesting and farm power reforms have helped energize Gujarat's agriculture" (Shat et al, 2009). This is possible due to more than 100,000 check dams and major programme on Khet Talavadi (water ponds in the fields).

**(E) SELF HELP GROUPS AND GROUP APPROACH:** The women's self help group (SHG) movement particularly SHG-bank linkage programme has spread all over the country. As mentioned

above, there are two successful models in the country. One is Andhra Pradesh model and the other is Kerala model. These programme's interventions and processes have resulted in a sustained process of empowerment of its women members. The real power of the SHG-bank linkage model (SBL model) lies in the economies of scale created by Self Help Group (SHG) Federations (comprising 150–200 SHGs each). This is evident, for example, in bulk purchase of inputs (seeds, fertilisers etc.) and marketing of outputs (crops, vegetables, milk, NTFPs etc). Government of India has now started National Rural Livelihoods Mission (NRLM) in 2011. There is a clear understanding that the SBL programme can only be successful if it is tied up with livelihood programmes such as improved agriculture, dairying, marketing etc.

**(F) INSTITUTIONAL INNOVATIONS:** As discussed above, there are many institutional innovations in input services, land water management and output marketing for marginal and small farmers. Other countries can learn from these experiences.

**(G) RIGHTS BASED APPROACH:** India has been rights approach for several development programmes and to maintain transparency. The country has Right to Information, 100 days of guaranteed unskilled employment under National Rural Employment Guarantee Act, Right to Education. It is also going for Right to Food by introducing National Food Security Act. These rights approach puts pressures on governments to deliver the services to citizens. Basically we have to go beyond supply side and focus on demand side. Social pressures are needed for public action. Better monitoring systems have to be developed at central, state, district and village levels to realize rights. Justiciability is one aspect of rights. However, one (particularly the poor) cannot go to court every time right is violated. It is the responsibility of citizens and NGOs to organize campaigns for better functioning of the programmes. Public accountability is crucial for the success of rights approach.

**(H) LEARNING FROM OTHERS:** India also can learn from countries like China and Brazil on agriculture and other policies on reducing poverty. India can learn from China on agricultural transformation, education, infrastructure, macro policies, doing business, equitable asset distribution and, rural non-farm sector development. Similarly, Latin American Countries like Brazil can offer lessons to India on agriculture research (e.g. Agriculture research corporation EMBRAPA) and Zero hunger programme.

## CONCLUSION

Farmers around the globe have high suicide rates relative to other professions (Judd et al., 2006). High levels of economic stress due to various sources of risk in agriculture and the rapid pace of structural change have previously been stated as reasons for this phenomenon (World Bank, 2007). In addition, this issue has received broad media attention around the globe, where it is often taken as a manifestation of the destitute situation of poor farmers in the wake of globalisation.

It is time to adopt policies, which are realistic and aimed at short term as well as long term solutions. In the first place, strategies must be devised to enable the small and marginal farmers greater access to institutional credit and discourage them from the shylocks tempting them with informal credit. Farmers need to be educated to adopt proper crop-mix. There is a need for shift in the mindset from a commodity-centred approach to an entirely new cropping or farming system based on integrated natural resource management.

We need to develop a comprehensive policy taking into account all the related aspects – agrarian reforms, rural credit system, agricultural insurance, crop changes, employment opportunities and the role of Panchayat Raj Institutions. There is a need for the total revitalisation and revamping of the farm sector and rural financial institutions to ensure average per cent age of sustainable growth per annum for the sector.

Even though suicides are relatively rare events, they are an essential facet in a comprehensive assessment of economic development and rural welfare for two reasons. First, the relative frequency of suicides is an objective quantitative measure of the prevalence of extreme individual distress. Second, unlike a transitory shock to household income, a suicide is irreversible.

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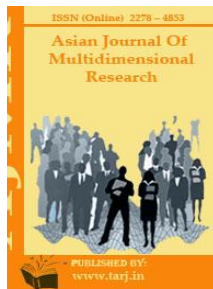
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## INTERNATIONAL TRADE THEORIES

Richa Bhanot\*

### ABSTRACT

*This paper reviews the various theories of trade which explains that goods produced competitively and more efficiently in a given country are exported. As a corollary, it means that those products that cannot be produced efficiently at home should be imported. The purpose of trade theory is to explain observed trade. That is, we would like to be able to start with information about the characteristics of trading countries, and from those characteristics deduce what they actually trade. This is why we have a variety of models that postulate different kinds of characteristics as the reasons for trade. It also explains the effects of trade on the domestic economy. Its purpose is to evaluate different kinds of policy. These trade theories include classical trade, neo-classical trade and new trade theory of trade.*

### INTRODUCTION

International trade means carrying on business activities beyond national boundaries. These activities normally include the transaction of economic resources such as goods, capital, services (comprising technology, skilled labour and transportation etc.) and international production. Production may either involve production of physical goods or provision of services like banking, finance, insurance, construction, trading, and so on. Thus, international trade includes not only trade of goods and services but also foreign investment, especially foreign direct investment.

In most countries, it represents a significant share of gross domestic product. Industrialization, advanced transportation, globalization, multinational corporations and outsourcing are all having a major impact on the international trade system. Increasing international trade is crucial to the continuance of globalization.

Without international trade, nations would be limited to the goods and services produced within their own borders. No country – developed, or developing – produces all commodities to meet its requirements. It needs to import items that are not produced domestically. At the same time, it tries

to export items all items that are produced over and above its domestic requirements, so that its balance of payments may not worsen in the wake of imports.

Economics deals with the proper allocation and efficient use of scarce resources. International economics is also concerned with the allocation of economic resources among countries. Such allocation is done in the world market by means of international trade. Under the concept of free trade, the best products are produced and sold in different competitive market. Such benefits of production efficiency like better quality and lower prices are available to all people of the world.

One fundamental principle in international trade is that one should buy goods and services from a country which has the lowest price, and sell his goods and services to a country which has the highest price. This is good for both buyer and seller. With free trade, the less developed countries have the opportunities to accelerate the pace of their economic development. They can import machines and adapt foreign technology. They can send their scholars and technocrats to more progressive countries to gain more knowledge and skills which are relevant to the particular needs of their developing economies.

International trade is the backbone of our modern, commercial world, as producers in various nations try to profit from an expanded market, rather than be limited to selling within their own borders. No country in the world can be economically independent without a decline in its economic growth. Even the richest countries buy raw materials for their industries from the poorest countries. If every country produces only for its own needs, then production and consumption would be limited. Clearly, such situation hampers economic progress. Furthermore, the standard of living of the people all over the world would have no chance to improve. Because of international trade, people can acquire goods and services which are not available in their own countries. Hence satisfaction of consumers can be maximized.

### **DOMESTIC TRADE VS. INTERNATIONAL TRADE**

When business transactions are carried out among parties within a country's borders is called as domestic trade. And when the business transactions occur between parties from more than one country or cross border activities is termed as international trade. The business transactions comprise of buying materials in one country and transport them off to another country for dealing out, shipping finished products from one country to another for retail sales, installing a new plant in a foreign country to take advantage of lower labour costs, or borrowing money from a bank in one country for the funding of operations in another. These business transactions are not associated with only one type of party; it may involve transactions between private business owners, governmental agencies, individual companies, and group of companies.

International trade is in principle not different from domestic trade as the motivation and the behaviour of parties involved in a trade do not change fundamentally regardless of whether trade is across border or not. However, international trade can differ from domestic trade for a number of reasons including the following:

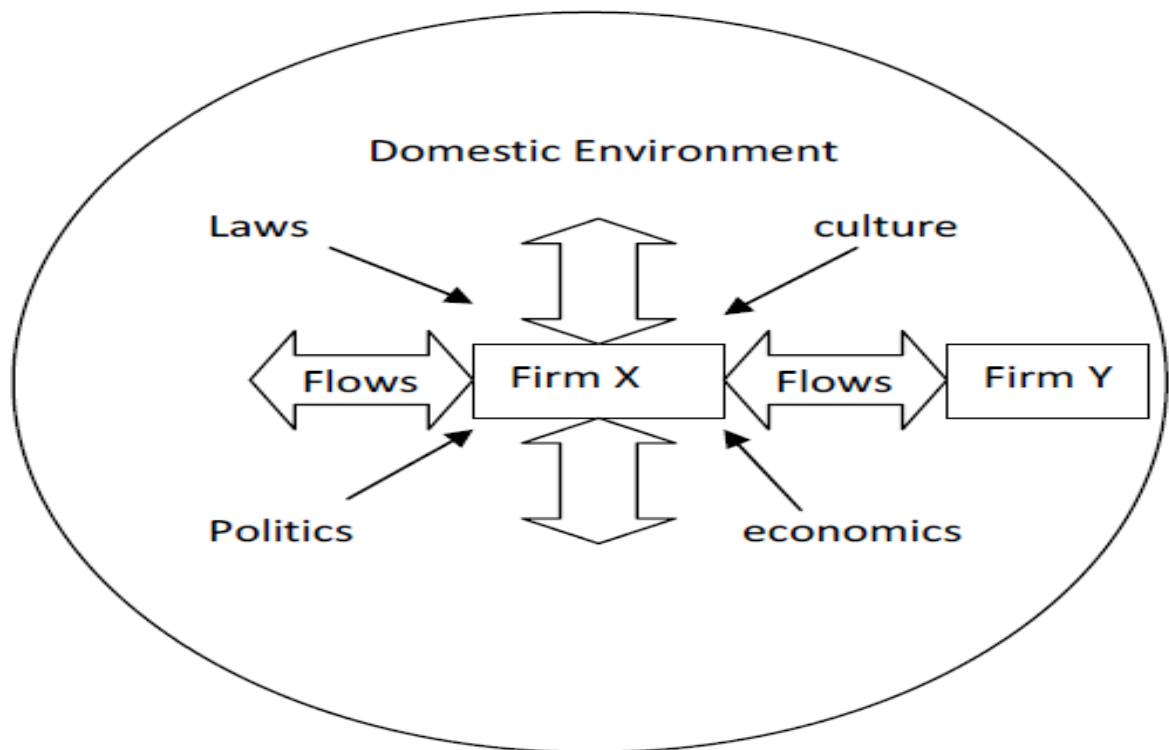
The first difference involves the dissimilarity in currencies. Countries involved in business may use different currencies; it may force at least one party to switch its currency into another. In other words, one of the parties would have to follow the prevailing market currency exchange rate to make its business transactions viable.

The second difference involves the difference in legal system of countries. It may compel one or more parties to adjust their practices to comply with local law. Occasionally, the consent of the legal system may act as barriers and be irreconcilable; creating complications for international managers.

Difference in cultures is also considered as dissimilarity in domestic and international trade. The cultures of the countries may vary according to the use of trading product and it may force each party to adjust its behavior to meet the expectation of the others. For example, the difference in the use of pork and wine face different attitudes in western and muslim countries.

Last is the difference in mobility of factors of production. Factors of production such as capital and labour are typically more mobile within a country than across nations. Thus, international trade is mostly restricted to trade in goods and services, and only to a lesser extent to trade in capital, labour or other factors of production. The trade in goods and services can serve as a substitute for trade in factors of production, that is, instead of importing a factor of production, a country can import goods that make intensive use of the factor of production. An example is the import of labour-intensive goods by the United States from China. Instead of importing Chinese labour the United States is importing goods from China that were produced with Chinese labour.

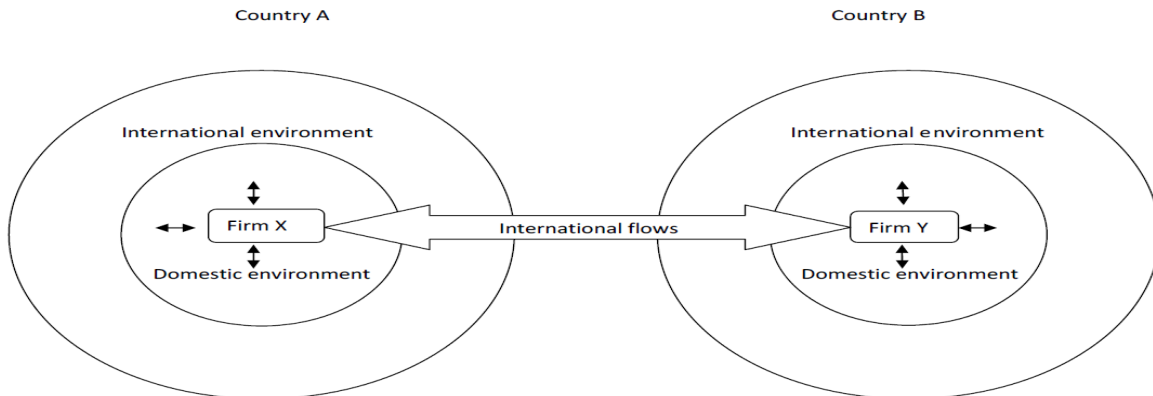
#### **FIRM AND ITS ENVIRONMENT**



**FIGURE 1.1 THE FIRM AND ITS DOMESTIC ENVIRONMENT**

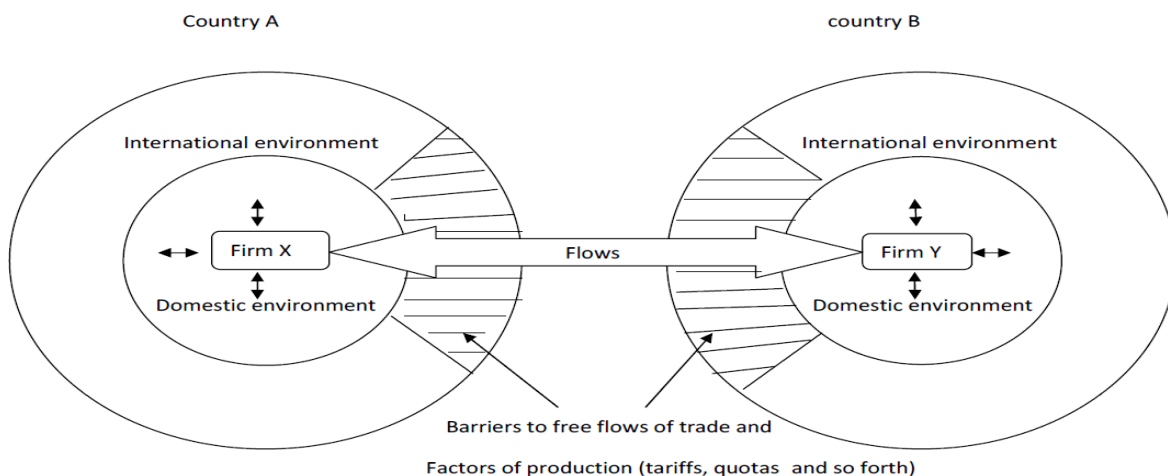
Figure 1.1 shows the complicated relationship that exists for a firm that operates simply within its own domestic environment and that has no international opportunities or problems as yet. All firms send flows of goods, services, salaries and wages, taxes, payments, information etc. into the

environment within which it operates. At the same time, all firms are affected by the socio-cultural; politico-legal, and economic influences of the environment. For domestic firms, many of these environmental factors serve as constants that require little; if any, management time. For foreign firms, however, even these factors are often variables that warrant special concern.



**FIGURE 1.2 THE FIRM AND ITS INTERNATIONAL ENVIRONMENT**

Figure 1.2 shows the basic model of international business activities. Two firms located in two different countries engage in some form of economic interchange. Since national borders are crossed, the business functions become more complicated, but at this phase there are no obstacles to such economic activity. However, even each local environment becomes more complicated as uniquely international elements of the environment now confront the firm, elements that were not part of the relevant environment of the wholly domestic firm—foreign currencies, special laws, special institutions (either to aid or hinder international activities).



**FIGURE 1.3 BARRIERS TO FREE INTERNATIONAL MOVEMENTS OF TRADE AND FACTOR FLOWS**

Figure 1.3 examines the interference to trade flows caused by (i) tariffs and other trade controls, which interfere with free movements of goods and services; (ii) exchange controls, which interfere with access to foreign exchange markets at single exchange rate; and (iii) capital controls, which are

designed to interfere with money and capital movements. Such obstacles occur in either the originating or receiving country and can obstruct either outflows or inflows and are part of the international environments of each country.

## **AN OVERVIEW OF TRADE THEORIES**

In order to keep the theories manageable and compact, certain assumptions are usually made. These are:

1. The first of the major simplifying assumptions is that all of the real variables of the economic system are determined independently of the monetary system. This assumption is often referred to as the neutrality of money.
2. A second important assumptions is that all prices are truly flexible, and that they are determined under conditions of perfect competition.
3. On the production side we will assume initially that the total amount of factors of production is fixed for any one country. This assumption implies that the supply curves for all factors of production are vertical straight lines; that is they are completely inelastic.
4. Closely associated with assumption of fixed domestic factor suppliers is the assumption of international immobility of factors.
5. It has also been assumed that the technology available to and used by all producers of the same product within one country is the same. The production functions within one country are therefore identical.
6. On the demand side of analysis, tastes are assumed to be given that is the indifference maps showing the preferences patterns of the consumers are given and invariant, so that no changes in taste will occur as a result of the sudden availability of certain internationally traded goods.
7. We assume that income distribution patterns are given and known. Any shift in income distribution pattern in conjunction with dissimilar taste patterns of the different economic groups affected by the change in income distribution can give rise to many problems relevant to international trade.
8. We assume that there are no barriers to trade in the form of costs of transportation, information and communication. All these costs would impose additional burdens on the traders, which would in most cases lead to a reduction in the volume of international trade.
9. Owing to the assumptions of flexible prices and neutrality of money, the full utilization of all productive resources within the economy is always assured.

### **4.1 THE MERCANTILISTS' VIEW OF TRADE**

The economic doctrine that prevailed during the first two centuries of the development of modern national state- the seventeenth and eighteenth centuries- was mercantilism. The doctrine of mercantilism had many modern features. It was highly nationalistic, it viewed the well-being of the own nation to be of prime importance, it favored the regulations and planning of economic activity as an efficient means of fostering the goals of the nation.

The mercantilists maintained that the way for a nation to become rich and powerful was to export more than it imported. The resulting export surplus would then be settled by an inflow of bullions or precious metals primarily gold and silver. Exports were viewed favorably as long as they brought in goods, solid gold but imports were viewed with apprehensions as depriving the country of its true value of richness- precious metals. Therefore, trade had to be regulated, controlled and restricted.

Mainly, Great Britain, France, Portugal, Netherlands and Spain used mercantilism during the 1500's and late 1900's. Mercantilist countries practiced the so called zero sum game, which meant that world wealth was limited and that countries only would increase their wealth at the expense of their neighbors. The main problem with mercantilism is that all countries engaged in export but was restricted from import, prevention from development of international trade.

Mercantilist terminology is still used today, an example when television commentators and newspapers headlines report that a country suffered an 'unfavorable' balance of trade that is its exports were less than its imports. Mercantilist policies are still very attractive to some firms and their workers as mercantilism benefits certain members of society. Modern supporters of these policies are known as NEO-MERCANTILISTS OR PROTECTIONISTS.

## **4.2 CLASSICAL APPROACH**

Classical trade theory dictates that the extent to which a country's exports and imports relates to its trading pattern with other nations. That is, countries are able to gain if each devotes resources to the generation of goods and services in which they have an economic advantage (RICARDO, 1817; SMITH, 1776). Therefore, classical trade theory effectively describes the scenario, where a country generates goods and services in which it has an advantage for consumption indigenously, and subsequently exports the surplus. Consequently, it is sensible for countries to import those goods and services in which they have an economic disadvantage.

There are two theories under classical trade theory:

### **4.2 (A) THEORY OF ABSOLUTE ADVANTAGE BY ADAM SMITH: WEALTH OF NATIONS (1776)**

The main concept of absolute advantage is generally attributed to Scottish Economist ADAM SMITH for his publication "An Inquiry into the Nature and Causes of the Wealth of Nations (1776)", in which he countered the intellectual basis of mercantilism and demonstrated that mercantilism actually weakens a country. Smith argued that it was impossible for all nations to become rich simultaneously by following mercantilism because the export of one nation is another nation's import and instead stated that all nations would gain simultaneously if they practiced free trade and specialized in accordance with their absolute advantage. Smith maintained that a country's true wealth is measured by the wealth of all its citizens, not just of its monarch.

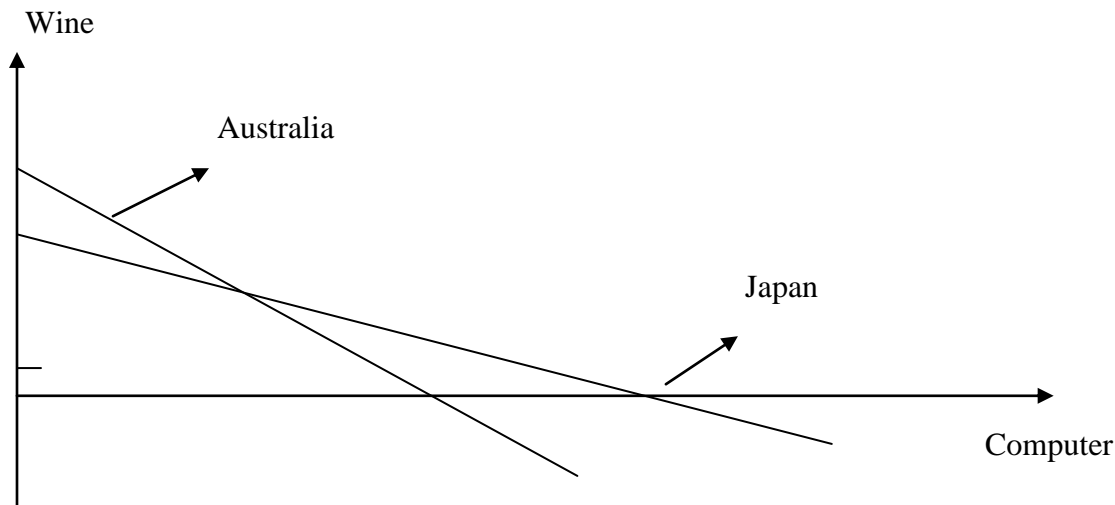
According to him, trade between two nations is based on absolute advantage, when one nation is more efficient than (or has an absolute advantage over) another in the production of one commodity but is less efficient than (or has an absolute disadvantage with respect to) the other nation in producing a second commodity, than both nations can gain by each specializing in the production of the commodity of its absolute advantage and exchanging part of its output with the other nation for the commodity of its absolute disadvantage . By this process, resources are utilized in the most

efficient manner and the output of both commodities measures the gains from specialization in the production available to be divided between the two nations through trade.

An example is that there are only two countries, say Australia and Japan. They both produce computers and wine, and use only one factor of production, labour. Japan produces 6 computers for every 1 bottle of wine, whereas, Australia produces only 4 computers for every 3 bottles of wine.

	COMPUTERS	WINE
AUSTRALIA	4	3
JAPAN	6	1

This suggests that Australia should export some of its wine to Japan, and Japan should export some of its computers to Australia. Australia has an absolute advantage over Japan, when producing wine, and Japan has an absolute advantage over Australia, when producing computers. This can be shown with the help of a diagram



Economists use the term absolute advantage when comparing the productivity of one person, firm or nation with that of another. The producer that requires a smaller quantity of inputs to produce a good is said to have an absolute advantage in producing that good.

Absolute advantage, however, can explain only a very small part of world trade today, such as the trade between developed and developing countries. Most of the bulk trade among developed countries could not be explained by absolute advantage.

It remained for David Ricardo, with law of comparative advantage, to truly explain the basis for and the gains from trade.

#### **4.2 (B) TRADE BASED ON COMPARATIVE ADVANTAGE BY DAVID RICARDO**



In 1817, Ricardo published his 'Principles of Political Economy', in which he published the law of comparative advantage. This is one of the most important and still unchallenged laws of economics, with many practical implications.

According to the law of comparative advantage, even if one nation is less efficient than (has an absolute disadvantage with respect to) the other nation in production of both commodities, there is still a basis for mutually beneficial trade. The first nation should specialize in the production of and export the commodity in which its absolute disadvantage is smallest (this is the commodity of its comparative advantage) and import the commodity in which it's absolute disadvantage is greatest (this is the commodity of its comparative disadvantage).

The Comparative Cost Advantage theory can be explained by way of the following example-

	<b>BREAD</b>	<b>CLOTH</b>
COUNTRY A	120	100
COUNTRY B	80	90

In the table above, in Country A it takes 120 units of labour to produce 1 unit of bread while Country B requires only 80 units of labour to produce the same bread. Further, in Country A it takes 100 units of labour to produce 1 unit of cloth while the same cloth is produced using only 90 units of labour in Country B.

Clearly, Country B has an advantage in production of both cloth as well as bread. Will Country B import anything from Country A in such a situation?

To see that we need to compare the opportunity cost of producing each of the commodities in both the countries that is amount of production of cloth to be sacrificed for production of bread and vice versa.

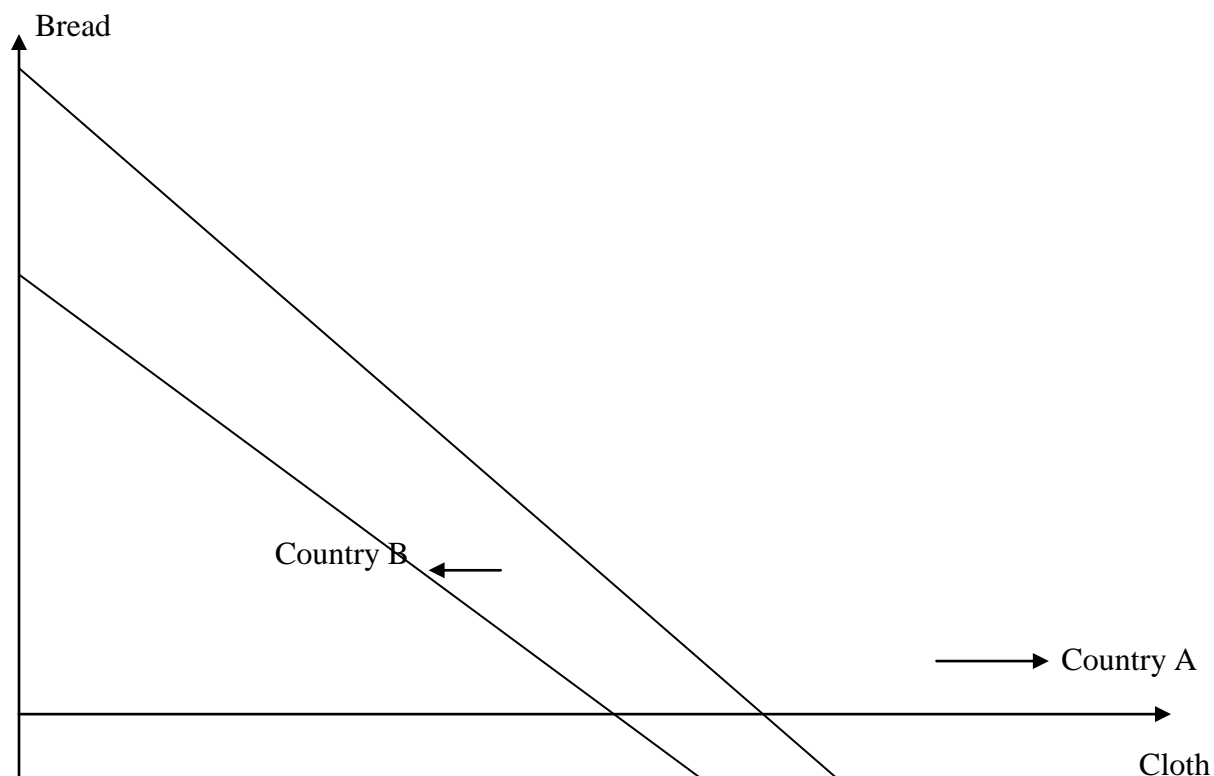
	<b>OPPORTUNITY COST OF BREAD</b>	<b>OPPORTUNITY COST OF CLOTH</b>
COUNTRY A	$120/100 = 1.20$ 120 units of labour can produce 1 unit of bread or alternatively to be used to produce 1.20 units of cloth. Thus, we sacrificed 1.20 units of cloth when we produce 1 unit of bread.	$100/120 = 0.83$
COUNTRY B	$80/90 = 0.88$	$90/80 = 1.12$

Thus, we see that opportunity cost of producing bread in Country B is less than in Country A, and on the other hand the opportunity cost of producing cloth is more in Country B than in Country A.

Therefore, Country B would thus specialize in production of bread and import cloth from Country A, while Country A would specialize in production of cloth and import bread from Country B.

Thus, the producer who has the smaller opportunity cost of producing a good is said to have a comparative advantage in producing that good.

The, Production Possibility Curve (PPC) can be used to illustrate the principle of comparative advantage.



Country A has an absolute an absolute advantage in the production of both cloth and bread. At all the points its PPC lies to the right of that of Country B. Country B have an absolute disadvantage. Due to abundance of raw materials or more productively efficient production techniques, Country A is able to produce more of cloth and bread than that of Country B.

Consider the opportunity cost of Country A producing one more unit of bread. It is 1.20. When, Country B produces one more unit of bread, its opportunity cost is 0.88. Economics is concerned with the allocation of scarce resources. Fewer resources are ignored if Country B concentrates its resources in the production of bread.

Similarly, opportunity cost of producing cloth is more in Country B than in Country A. Fewer resources are forgone if Country A specializes in the production of cloth.

Thus, Country A should produce cloth and Country B bread and the surpluses produce should then be traded with each other.

#### **4.3 THE HECKSCHER – OHLIN THEORY OF FACTOR ENDOWMENT**

It has been previously stated that the difference in relative commodity prices between two nations is evidence of their comparative advantage and forms the basis for mutually beneficial trade. Factor Endowment and Heckscher – Ohlin (H-O) theory take this one step further by analyzing the effect that international trade has on the earnings of factors of production in the two trading nations. The H-O theory presents the issues that international and interregional differences in the production costs occur because of the differences in the supply of production factors. Those goods that require a large amount of the abundant, thus less costly factor will have lower production costs, enabling them to be sold for less in international market.

Heckscher – Ohlin theorem states that “A nation will export the commodity whose production requires the intensive use of nation’s relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation’s relatively scarce and expensive factor.”

In short, the relatively labour – rich nations exports the relatively labour intensive commodity and import the relatively capital intensive commodity. Countries such as Australia with relatively large amounts of land do export intensive products like grain whereas a country like China would export labour intensive goods.

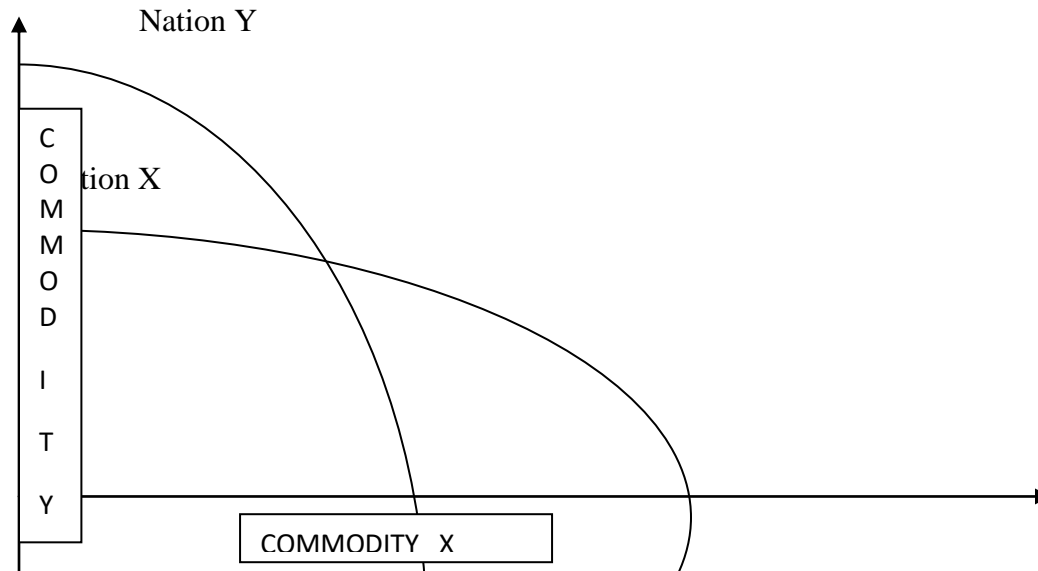
The theory can be explained with the help of an example as follows:

##### **ASSUMPTIONS**

- (i) We assume a two countries (Country A and B) – two commodities (Bread and Cloth) situation
- (ii) We assume that each country is endowed with two factors of production i.e. Labour and Capital. The proportion of labour and capital in each country is different. This would mean that the relative prices of labor and capital in the two countries will also be different.
- (iii) We also assume that for producing each of the two commodities requires different proportions of labor and capital that is different production functions for different commodities.
- (iv) Production function displays constant returns to scale for both commodities.
- (v) Factors of production cannot be moved across countries.
- (vi) While there are two factors of production, each of the factors is homogeneous i.e. 1 unit of labor is similar to the other and so also for capital.
- (vii) All factors of production are fully employed and there is perfect competition in both countries.
- (viii) No change in technology. Also technology is same in both countries.

## EXPLANATION

Suppose, that Nation 1 is the labour abundant (L-abundant) nation and commodity X is the L-intensive commodity and Nation 2 is the capital abundant (K-abundant) nation and commodity Y is the K-intensive commodity.



The production frontier of Nation 1 is flatter and wider than the production frontier of Nation 2 (as shown in figure above) indicating that Nation 1 can produce relatively more of commodity X than Nation 2. That is, Nation 1's production frontier is skewed toward the horizontal axis measuring commodity X as Nation 1 is labour-abundant nation. On the other hand, since Nation 2 is the capital abundant country, its production function is skewed toward the vertical axis measuring commodity Y.

There are exceptions to the H-O theory which are to do with assumption that Ohlin drew. One assumption was that the prices of factors dependent only on the factor endowment. This is however untrue because as factor prices are not set in a perfect market. There are such factors to consider such as legislated minimum wages and benefits, force the cost of labour to rise to a point greater than the value of the product than many workers can produce.

## LEONTIEF PARADOX

Many economists attempted to disprove the H-O theory. The most notable effort was by a man named WASSILY LEONTIEF. He tested whether the factor proportions theory could be used to explain the type of goods that United States (U.S) exported and imported.

Leontief's premise was based on a widely shared view that some countries, such as the United States, are endowed with large amount of capital, while others were short on capital but have abundant labour resources. There, it was thought that the U.S would be more efficient in producing capital-intensive products while importing labour-intensive products from overseas.

Leontief first had to devise a method to determine the relative amounts of labour and capital in a good. His solution, known as input-output analysis, is a technique of decomposing a good into

values and quantities labour, capital and other potential factors employed in the good's manufacture. He then used this methodology to analyze the labour and capital content of all U.S merchandise imports and exports. The hypothesis was relatively straightforward: U.S exports should be relatively capital intensive than U.S imports. The results were, however, a bit of shock.

Leontief found that products that U.S firms exported were relatively more labour intensive than imported products. It seemed that if the factor proportion theory were true, the U.S is a labour abundant country.

A variety of explanations and continuing studies have attempted to solve what has become known as LEONTIEF PARADOX. At first, it has thought to have been simply a result of the specific year (1947) of the data. However, same results were found with different years and data sets. Second, it was noted that Leontief did not really analyze the labour capital contents of imports but rather the labour and capital contents of the domestic equivalent of these imports. It was possible that the U.S was actually producing the products in a more capital – intensive fashion than were the countries from which it also imported the manufactured goods. Finally, the debate turned to distinguish different types of labour and capital. For example, several studies attempted to separate labour factor into skilled labour and unskilled labour. These studies have continued to show results more consistent with what the factor proportion theory would predict for country trade patterns.

#### **4.4 NEW TRADE THEORY (NTT)**

New Trade Theory is a collection of economic models in international trade which focuses on the role of increasing returns to scale and network effects which were developed in the late 1970's and early 1980's.

New Trade Theorists relaxed the assumptions of constant returns to scale and some argues that using protectionist measures to build up a huge industrial base in certain industries will then allow those sectors to dominate the world market.

NTT tries to explain elements of trade that comparative advantaged based models (RICARDO, SMITH, and HECKSCHER–OHLIN) had difficulty with. These include the fact that most trade is between countries with similar factor endowment and productivity levels, and large amount of multinational production (that is foreign direct investment) which exists. NTT are often based on the assumption like monopolistic competition and increasing returns to scale. One result of these theories is that home-market effect which asserts that if an industry tends to cluster in one location because of returns to scale and if that industry has high transportation costs, the industry will be located in the country with most of its demand.

The most comprehensive and widely accepted explanation, at least within the economic theory, was given by Paul Krugman.

Prior to Krugman's work, trade theory emphasized trade based on the comparative advantage of countries with very different characteristics, such as country with higher productivity in agricultural good, exporting agricultural goods to a country with higher productivity in industrial goods. However, in the 20th century, an ever larger share of trade occurred between countries with similar characteristics, which are difficult to explain by comparative advantage.

Krugman's explanation of trade between similar countries was proposed in 1979 paper in the JOURNAL OF INTERNATIONAL ECONOMICS and involves two key assumptions: that consumers prefer a diverse choice of brands and that production favors economies of scale. Consumer's preferences for diversity explain the survival of different versions of say cars like Volvo and BMW. But because of economies of scale, it is not profitable to spread the production of Volvo all over the world; instead. It is concentrated in a few factories (or maybe just one). This logic explains how each country may specialize in producing a few brands of any given type of products, instead of specializing in different types of products.

### **ECONOMIES OF SCALE AND IMPERFECT COMPETITION**

Paul Krugman, along with several other colleagues, developed a theory of how trade is altered when markets are not perfectly competitive or when production of specific products possesses economies of scale. His theoretical developments focused on cost of production and how cost and price drive international trade. Using theoretical developments from micro economics and market structure analysis, Krugman focused on two types of economies of scale: internal economies of scale and external economies of scale.

Internal economies of scale - when the cost per unit of output depends on the size of an individual firm, the larger the firm, the greater the scale benefits and the lower the cost per unit. A firm possessing internal economies of scale could potentially monopolize an industry (creating an imperfect market), both domestically and internationally. If it produces more, lowering the cost per unit, it can lower the market price and sell more products, because it sets the market prices.

The link between dominating a domestic industry and influencing international trade comes from taking this assumption of imperfect markets back to the original concept of comparative advantage. For this firm to expand sufficiently to enjoy its economies of scale, it must take resources away from other domestic industries. A country then sees the range of products in which it specializes narrowing, providing an opportunity for other countries to specialize in the so called abandoned product ranges. Countries again search out and exploit comparative advantage.

A particular powerful implication of internal economies of scale is that it provides an explanation of intra-industry trade. Intra-industry trade occurs when a country seemingly imports and exports the same products, an idea that is obviously inconsistent with any of the trade theories put forward in the past three centuries. According to Krugman, internal economies of scale may lead a firm to specialize in a narrow product line; other firms in other countries may produce products that are similarly narrow, yet extremely similar; product differentiation. If consumers in either country wish to buy both the products, they will be importing and exporting the products that are, for all intents and purposes, the same.

External economies of scale – when the cost per unit of output depends on the size of an industry, not the size of an individual firm, the industry of that country may produce goods at lower costs than the same industry that is smaller in the other countries. A country can potentially dominate world markets in a particular product, not because it has one massive firm producing enormous quantities (for example; Boeing) but rather it has many small firms that interact to create a large, competitive, critical mass (for example; semi –conductors in Penang, Malaysia). No one firm need be all that

large, but several firms may create such a competitive industry in total that firms in other countries cannot compete.

Unlike internal economies of scale, external economies of scale may not necessarily lead to imperfect markets, but they may result in an industry maintaining dominance in its field in the world markets. This may explain why all industries do not necessarily always move to the country with lowest-cost energy resources, or labour. What gives rise to this critical mass of small firms and their interrelationships is a much more complex question. The work of Michael Porter provides a partial explanation of how these critical masses are sustained.

#### **4.5 COUNTRY SIMILARITY THEORY**

Country Similarity Theory was developed by a Swedish economist named Staffen Linder (1961).

However, before the country similarity theory can be analyzed it is essential to understand the concept of intra-industry trade. Intra-industry trade is the trade between two countries of goods produced by the same industries.

Linder believed that international trade of manufactured goods occurred between countries at the same stage of economic development that shared the same consumer preferences. Therefore, the country similarity theory consist of the value that most trade in manufactured goods should be between nations with similar per capita income and that intra industry trade in manufactured goods should be common.

Examples of this kind of trade include automobiles, foodstuffs and beverages, computers and minerals.

Europe exported 2.6 million motor vehicles in 2002, and imported 2.2 million of them. Japan exported 4.7 million vehicles in 2002 (1 million of which went to Europe, and 2 million to North America) and imported 0.3 million.

Why do countries at the same time export and import the products of the same industry, or import and export the same kinds of goods?

According to Nigel Grimwade, "An explanation cannot be found within the framework of classical or neo-classical trade theory. The latter predicts only intra-industry specialization and trade."

The traditional models of trade were set out by the model of David Ricardo and the Heckscher-Ohlin model, which tried to explain the occurrence of international trade. Both models used the idea of comparative advantage and an explanation of why countries trade. However, many economists have made the point of claiming that these models provide no explanation towards intra-industry trade as under their assumptions countries with identical factor endowments would not trade and produce goods domestically. Hence, over the past three decades as intra-industry trade has developed many economists have looked at other explanations.

The most comprehensive and widely accepted explanation, at least within economic theory, is that of Paul Krugman's New Trade Theory. Krugman argues that economies specialize to take advantage of increasing returns, not following differences in regional endowments (as contended by neo-classical theory). In particular, trade allows countries to specialize in a limited variety of production and thus



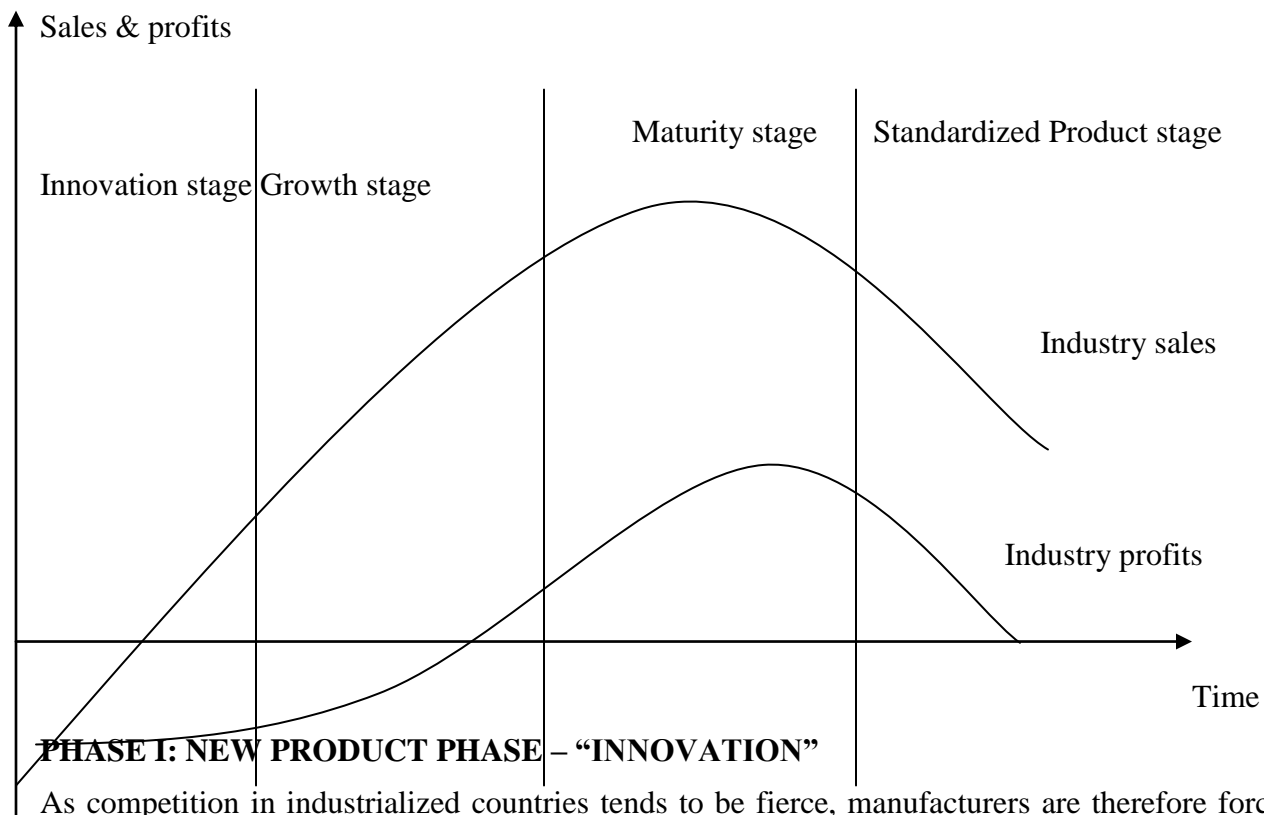
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reap the advantages of increasing returns (that is economies of scale), but without reducing the variety of goods available for consumption.

Intra-industry trade has been considered in international trade literature as the explanation of the unexpectedly large expansion of industrial trade among OECD countries, for which it represents more than two-thirds of their total international trade by the beginning of the seventies.

#### **4.6 INTERNATIONAL PRODUCT LIFE CYCLE THEORY (IPLC)**

A very different path was taken by Raymond Vernon in 1966 concerning what is known as International Product Life Cycle Theory (IPLC). IPLC is a valuable instrument in analyzing the effects of product evolution on the global scale - diverging significantly from traditional approaches. Vernon focused on the products rather than on the country and technology of its manufacture, or its factor proportions. The IPLC theory generally applies to established companies in industrialized countries who expand their product range. The theory can be broken down into major areas which can be shown with the help of a diagram.



As competition in industrialized countries tends to be fierce, manufacturers are therefore forced to search constantly for better ways to satisfy customer needs. The core elements in new product design are gained from customer feedback from the previous models. Once the product enters the domestic market and begins to create a positive reputation, the demand increases and hence, we come to an end of the first phase of IPLC.

#### **PHASE II: GROWTH PAHSE – “EXPORTS”**

As the product receives positive customer response, the international demand for the product begins. The manufacturers begin exporting to increase its market share. An example of this was the personal computer (PC) craze in the early 80's. In 1984, 55,000 PCs were sold in the United States and by 1985 the industry had experienced a 136 fold increase to 7 million PCs.

#### **PHASE III: MATURITY PHASE –“FOREGIN PRODUCTION BEGINS”**

As demand increases with the new global market, it becomes economically feasible to begin production in various nations. By sharing technology on the manufacturing of the product, the company has lost an advantage. The end of this stage signifies the highest point in the IPLC theory.

#### **PHASE IV: STANDARDIZED PRODUCT OR DECLINING PHASE-“FOREIGN COMPETITION IN EXPORTS MARKETS”**

This is the threatening stage for the company. Local manufactures have gained experience, in producing and selling their product, hence their costs have fallen. As they have saturated their initial market, they may begin to look elsewhere (that is other nations) to promote their product. The reason

that is threatening for our company is that this other nation may have a competitive advantage and this process stress on our market share.

Although interesting in its own right for increasing emphasis on technology's impact on product costs, IPLC theory was important because it explained international investment. Not only did the theory recognize the mobility of capital across countries (breaking the traditional assumption of factor immobility), it shifted the focus from the country to the product. This made it important to match the product by its production location to examine competitiveness. The IPLC theory offers to an insight into some trade patterns that traditional theory fails to explain. However, IPLC theory does have its disadvantages. Perhaps the most recognizable is the assumption that products are released initially in the domestic markets. Many globalized companies tend to release their new products lines internationally, not domestically; hence this theory cannot be applied to many of today's products. It is obviously most appropriate for technology based products that are likely to experience changes in production process as they mature. Other products, either resource-based (such as minerals and other commodities) or services (which employ capital but mostly in the form of human capital), are not easily characterized by stages of maturity. And product cycle theory is most relevant products that eventually fall victim to mass production and cheap labour force. But, all things considered, IPLC served to breach a wide gap between the trade theories of old and the intellectual challenges of a new, more globally, technology, information and firms themselves were more mobile.

#### **4.7 GLOBAL STRATEGIC RIVALRY THEORY**

The Global Strategic Rivalry theory was developed in the 1980s as a means to 'examine the impact on trade flows arising from global strategic rivalry between Multi National Corporations. It explores the notion that in order to stay viable, firms should exploit their competitive advantage globally and try to keep it sustainable. There are many ways in which a firm can hold a competitive advantage, these include; owning intellectual property rights, investing in research and development, achieving economies of scale or scope, exploiting the experience curve.

A good example of strategic alliance, which gave two companies a competitive advantage, is Qantas and British Airways. Qantas had solid air route throughout the Asia Pacific region, likewise British airways had strong network within Europe, North Atlantic, and North America. By forming an alliance in 1993, both companies strategically positioned themselves to have a strong worldwide network. This global strategic rivalry theory gave them a competitive advantage.

Such firms that were innovative and could establish competitive advantages by owning intellectual property rights to useful technologies, that pursued research and development aggressively that strived to achieve economies of scale and scope and that were learning organization and could become more efficient with time were able to succeed in international competition.

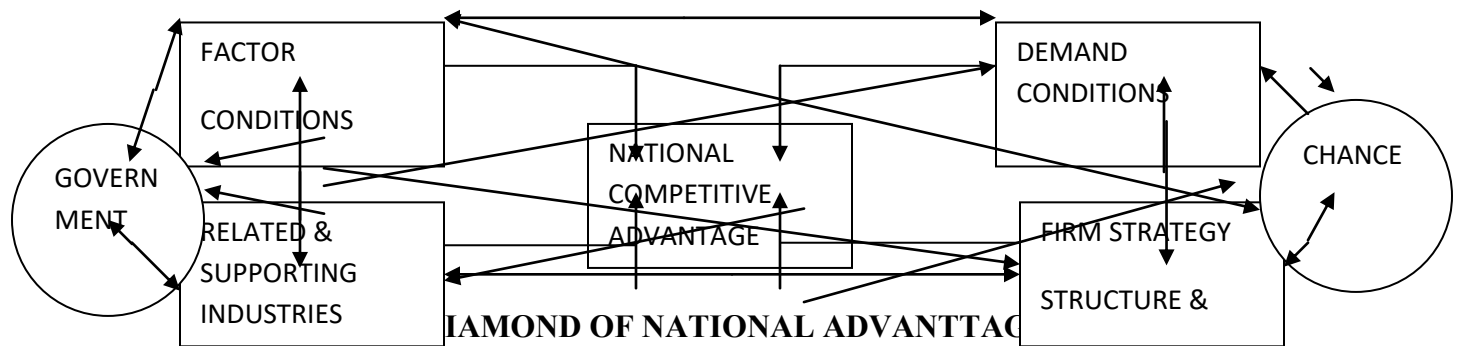
#### **4.8 PORTER'S THEORY OF NATIONAL COMPETITIVE ADVANTAGE**

Michael Porter's book "The Competitive Advantage of Nations", published in 1990 was based on a study of 100 firms in 10 developed nations. Porter develops a new theory of how nations, states and regions compete and their sources of economic prosperity. As he states

"National prosperity is created, not inherited. It does not grow out of a country's natural endowments, its labour pool, its interest rates, or its currency's values as classical economist insists."

Porter questions how Switzerland a nation with few natural resources, is a world leader in the production of chocolates, and Japan, a country whose economy was in shambles after World War II, is now a global leader in making low cost, mass-produced, quality, high technology products. Porter outlines a number of factors for this that go beyond natural resources, among these are: sizable demand from sophisticated consumers, an educated and skilled workforce, intense competition in the industry and existence of related and supporting suppliers. Porter also discussed external influences such as government conditions and chance.

These forces have been more or less taken into account by earlier economists. What is crucial in Porter's thesis is that it is the interaction among these factors that shapes the competitive advantage.



### **(I) DEMAND CONDITIONS**

Porter argues that companies should be participating in national markets with strongest rivals and most demanding customers in order to build international competitiveness. A company faced to more competitors' forces strives to make themselves more efficient in order to have an edge over their competitor and maximize profits.

### **(II) FACTOR CONDITIONS**

Each nation possesses what economists have termed Factors of Production. They are nothing more than the inputs to compete in any industry such as labour, arable land, natural resources, capital and infrastructures. The factors most important to competitive advantage in most countries, especially in the industries, most vital to productivity growth in advanced economies, are not inherited but are created within a nation, through processes that differ widely across nations and among industries.

### **(IV) RELATED AND SUPPORTING INDUSTRIES**

There has been an unexplained trend on why companies, suppliers, competitors and supporting industries tend to congregate in close proximity to each other. This focuses on competition within the domestic market. In other words, when a new industry emerges on one country, domestic suppliers start competing for business. Thus, through this competition, quality is bound to increase and prices will decrease which in turn reinforces and gives the industry a competitive advantage in the international market.

### **(IV) FIRM, STRATEGY, STRUCTURE AND RIVALRY**

The fourth determinant is the context in which firms are created, organized and managed as well as the nature of domestic rivalry. The pattern of rivalry at home also has a profound role to play in the

process of innovation and the ultimate prospects for international success. A firm strategy and competition in domestic market shows its performance in the international market. In some cases strategies used in the domestic market can be applied internationally with little or no modification. However, sometimes it is not easy.

Porter's emphasis on innovation as the source of competitiveness reflects an increased focus on the industry and the product, more than we have seen in the past three decades. The acknowledgment that the nation is "more, not less, important" is to many eyes a welcome return to a positive for government and even national-level private industry in encouraging international competitiveness. Factor conditions as a cost component, demand conditions as a motivator of firm actions, and competitiveness all combined to include the classical, factor proportions, product life cycle, and imperfect competition theories in a pragmatic approach to the challenges that the global markets of the 21st century present to the firms of today.

## **SUMMARY**

The theories of trade explain that goods produced competitively and more efficiently in a given country are exported. As a corollary, it means that those products that cannot be produced efficiently at home should be imported. The purpose of trade theory is to explain observed trade. That is, we would like to be able to start with information about the characteristics of trading countries, and from those characteristics deduce what they actually trade. This is why we have a variety of models that postulate different kinds of characteristics as the reasons for trade. It also explains the effects of trade on the domestic economy. Its purpose is to evaluate different kinds of policy. These trade theories include classical trade, neo-classical trade and new trade theory of trade.

The advocates of mercantilism argued for trade surplus that would in turn add to the country's stock of gold and country's wealth. Mercantilist terminology is still used today when journalists report that a country suffered an "unfavorable" balance of trade—that is, its exports were less than its imports. Politically, mercantilism was popular with many manufacturers and their workers. Export-oriented manufacturers favored mercantilist trade policies, such as those establishing subsidies or tax rebates, which stimulated sales to foreigners. Domestic manufacturers threatened by foreign imports endorsed mercantilist trade policies, such as those imposing tariffs or quotas, which protected the manufacturers from foreign competition. . Mercantilist policies are still very attractive to some firms and their workers as mercantilism benefits certain members of society. Modern supporters of these policies are known as NEO-MERCANTILISTS OR PROTECTIONISTS.

The classical economists based their theories on the principle of cost advantage. According to Adam Smith, mercantilism's basic problem is that it confuses the acquisition of treasure with the acquisition of wealth. Smith demonstrated that it actually weakens a country, because it robs individuals of the ability to trade freely and to benefit from voluntary exchanges. Moreover, in the process of avoiding imports at all costs, a country must squander its resources producing goods it is not suited to produce. The inefficiencies caused by mercantilism reduce the wealth of the country as a whole, even though certain special interest groups may benefit. Smith advocated free trade among countries as a means of enlarging a country's wealth. To answer the question of which goods a country should export and import, Smith developed the theory of absolute advantage, which suggests that a country should export those goods and services for which it is more productive than other

countries are and import those goods and services for which other countries are more productive than it is.

The theory of absolute advantage makes intuitive sense. Unfortunately, the theory is flawed. What happens to trade if one country has an absolute advantage in both products? The theory of absolute advantage incorrectly suggests that no trade would occur. David Ricardo, an early-nineteenth-century British economist, solved this problem by developing the theory of comparative advantage, which states that a country should produce and export those goods and services for which it is relatively more productive than other countries are and import those goods and services for which other countries are relatively more productive than it is.

The difference between the two theories is subtle: Absolute advantage looks at absolute productivity differences; comparative advantage looks at relative productivity differences. The distinction occurs because comparative advantage incorporates the concept of opportunity cost in determining which good a country should produce. The opportunity cost of a good is the value of what is given up to get the good. The lesson of the theory of comparative advantage is simple but powerful: You are better off specializing in what you do relatively best. Produce (and export) those goods and services you are relatively best able to produce, and buy other goods and services from people who are relatively better at producing them than you are.

The theory of comparative advantage begs a broader question: What determines the products for which a country will have a comparative advantage? To answer this question, two Swedish economists, Eli Heckscher and Bertil Ohlin, developed the theory of relative factor endowments, now often referred to as the Heckscher-Ohlin theory. The Heckscher-Ohlin theory suggests a country should export those goods that intensively use those factors of production that are relatively abundant in the country.

Since World War II, international business research has focused on the role of the firm rather than the country in promoting international trade. Firm-based theories have developed for several reasons - the growing importance of MNCs in the postwar international economy; the inability of the country-based theories to explain and predict the existence and growth of intra-industry trade and the failure of Leontief and other researchers to empirically validate the country-based Heckscher-Ohlin theory.

Unlike country-based theories, firm-based theories incorporate factors such as quality, technology, brand names, and customer loyalty into explanations of trade flows. Because firms, not countries, are the agents for international trade, the newer theories explore the firm's role in promoting exports and imports.

Country-based theories do a good job of explaining inter-industry trade among countries, but not intra-industry trade. Inter-industry trade is the exchange of goods produced by one industry in country A for goods produced by a different industry in country B, such as the exchange of French wines for Japanese clock radios. Yet much international trade consists of intra-industry trade, that is, trade between two countries of goods produced by the same industry. For example, Japan exports Toyotas to Germany, while Germany exports BMWs to Japan. Intra-industry trade accounts for approximately 40 percent of world trade, and it is not predicted by country-based theories.



In 1961, Swedish economist Steffan Linder sought to explain the phenomenon of intra-industry trade. Linder hypothesized that international trade in manufactured goods results from similarities of preferences among consumers in countries that are at the same stage of economic development. In his view, firms initially manufacture goods to serve the firms' domestic market. As they explore exporting opportunities, they discover that the most promising foreign markets are in countries where consumer preferences resemble those of their own domestic market. As each company targets the other's home market, intra-industry trade arises. Linder's country similarity theory suggests that most trade in manufactured goods should be between countries with similar per capita incomes and that intra-industry trade in manufactured goods should be common.

Product life cycle theory, which originated in the marketing field to describe the evolution of marketing strategies as a product matures, is a second firm-based theory of international trade. As developed in the 1960s by Raymond Vernon of the Harvard Business School, international product life cycle theory traces the roles of innovation, market expansion, comparative advantage, and strategic responses of global rivals in international production, trade, and investment decisions. According to Vernon's theory, the international product life cycle consists of three stages called new product, maturing product, and standardized product.

More recent explanations of the pattern of international trade examine the impact on trade flows of global strategic rivalry between MNCs. According to this view, firms struggle to develop some sustainable competitive advantage, which they can then exploit to dominate the global marketplace. Like Linder's approach, global strategic rivalry theory predicts that intra-industry trade will be commonplace. It focuses, however, on strategic decisions that firms adopt as they compete internationally. These decisions affect both international trade and international investment.

Whereas Porter believes that success in international trade comes from the interaction of four country- and firm-specific elements. These elements are factor conditions, demand conditions, related and supporting industries and firm's strategy, structure and rivalry. Porter's theory believes that countries seek to improve their national competitiveness by developing successful industries. The success of targeted industries depends upon the factors that are termed the diamond of national advantage.

## CONCLUSION

Mainstream trade theory based on the Heckscher - Ohlin (H-O) models, has put forward certain assumptions such as constant returns to scale and the associated market structure of perfect competition, which the new trade theorists reject in favor of increasing returns to scale and imperfectly competitive or oligopolistic market structures. They claim that their models mirror more accurately the markets in which most industrial commodities are exchanged, and explain phenomena such as intra-industry trade that Heckscher – Ohlin theory could not explain.

The founders of the new trade theory did not design it to replace the Heckscher - Ohlin theory as the sole explanation of trade flows. Factor endowments are still recognized as the chief explanation of trade in primary and natural resource – intensive commodities. The new trade theory is primarily meant to explain trade in manufactures subject to increasing returns. Some of its models combine intra-industry trade in manufactures with inter-industry trade based on factor endowments, so that comparative advantage remains a subsidiary but essential explanation of trade flows.

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The new trade theory consist of set of heterogeneous models each of which is based on particular assumptions regarding technology, market structure (including the number of firms in the industry), consumer tastes, and other features. There is corresponding heterogeneity of rationales for trade, types of gains from trade and scopes for public policies, including strategic trade policy.

The new trade theory can be regarded as marking a clear milestone on the road to a more realistic theory of trade, without the assumptions of perfect competition and constant returns to scale that had become increasingly hard to maintain for world trade in manufacturers. The new trade theory could successfully explain phenomenon of intra-industry trade, and the fact that most of the increase in world trade in the postwar period occurred among the industrialized countries. A key success of the new trade theory was the formulation of models of imperfectly competitive industries marked by economies of scale, where the gains from trade include not only increased consumption of the goods consumed before trade, but a greater variety of commodities available at cheaper prices due to longer production runs in the exporting countries.

One of the strengths of the new trade theory is that it can establish with precision results that were formerly intuited, but whose plausibility could not be confirmed. The tools of modern economic theory have allowed trade economists to create models that portray the functioning of economies of present – day complexity, rather than the simpler economies that existed one or two centuries ago.





## DETERMINANTS OF KNOWLEDGE AND PRACTICES OF WOMEN RELATED TO SAFE MOTHERHOOD: AN APPRAISAL OF THE DELIVERY HUT SCHEME IN HARYANA

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### ABSTRACT

**BACKGROUND:** *The study was carried out in the villages of Haryana to appraise the impact of the Delivery Hut Scheme with the purpose of promoting safe motherhood and institutional deliveries in the state and hence understand the determinants that influence knowledge and practices of women pertaining to safe motherhood.*

**AIM:** *To explore and understand the determinants of knowledge and practices of women related to safe motherhood.*

**STUDY DESIGN:** *Exploratory Study*

**PARTICIPANTS:** *Women in the reproductive age of 18-40 years*

**METHODOLOGY:** *Three districts of Rohtak, Gurgaon and Jhajjar based on the Human Development Index (HDI) scores were identified as the study locale. From each district, four Delivery Huts in four different blocks were randomly selected and ten women beneficiaries from each of these huts were interviewed.*

**RESULTS/FINDINGS:** *The study deduced that knowledge and practices of women related to safe motherhood were significantly correlated and were dependent on caste, status of pregnancy, parity of child and land holding.*

**CONCLUSION:** *At the grassroots, determinants like caste and economic status (reflected by owning a land) govern the ability to access free-government sponsored health facilities or go for a paid higher private/government facility; and hence it strongly influenced a woman's intention to deliver at the Delivery Hut. Thus, all these aspects must be taken into consideration while planning an intervention and the facilities and behaviour change strategies should be tailored according to the differentials of social groups paying more thrust on quality along with quantity.*

**KEYWORDS:** *Delivery Huts, Haryana, Knowledge, Practices, Safe Motherhood.*

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## INTRODUCTION

### MATERNAL HEALTH: GLOBAL SCENARIO

According to WHO, 2014, every day, approximately 800 women die from preventable causes related to pregnancy and childbirth and among these 99% of all maternal deaths occur in developing countries (WHO, 2014). Disparities exist within countries too. It is seen that poor, uneducated, and rural women suffer disproportionately compared to their educated, wealthy, and urban counterparts. It is seen that in a country, like India maternal deaths rarely occur due to one isolated cause; multiple foreseeable and preventable determinants often converge to cause a maternal death. The fact that most deaths occur among low-income women with little or no formal education, women belonging to scheduled castes and tribes, and adolescent girls locked in child marriage reveal that multiple forms of discrimination underlie these deaths (The Center for Reproductive Rights, 2008). To reach the Millennium Development Goal 5, it is imperative that maternal and newborn health care programmes should include key interventions to improve maternal and newborn health and survival (WHO, 2009).

### NEED FOR KNOWLEDGE AND PRACTICES RELATED TO SAFE MOTHERHOOD

Knowledge and practices related to safe motherhood are important determinants of a mother's decision to opt for an institutional birth and coherently influence her health seeking behaviour. Knowledge about safe motherhood is an essential aspect of securing the same. If a woman, especially the one who is pregnant has a fair knowledge about various components of safe motherhood such as what is ANC, number of visits required for ANC, diet during pregnancy, awareness about the health worker, institutional delivery and its importance; then a woman can be sure of having a safe birth outcome and enriching birth experience. Knowledge remains insignificant if not applied into practice or behaviour. Same is the case when it comes to safe motherhood, where practice or action actually makes a vital difference in the outcome. Common practices that can ensure a safe motherhood are an early ANC registration and timely ANC visits, enquiring about delivery facility, making an alternate arrangement for delivery, seeking family planning after child

birth and accessing the nearest health centre for immunization and other illness that may fall in line of pregnancy.

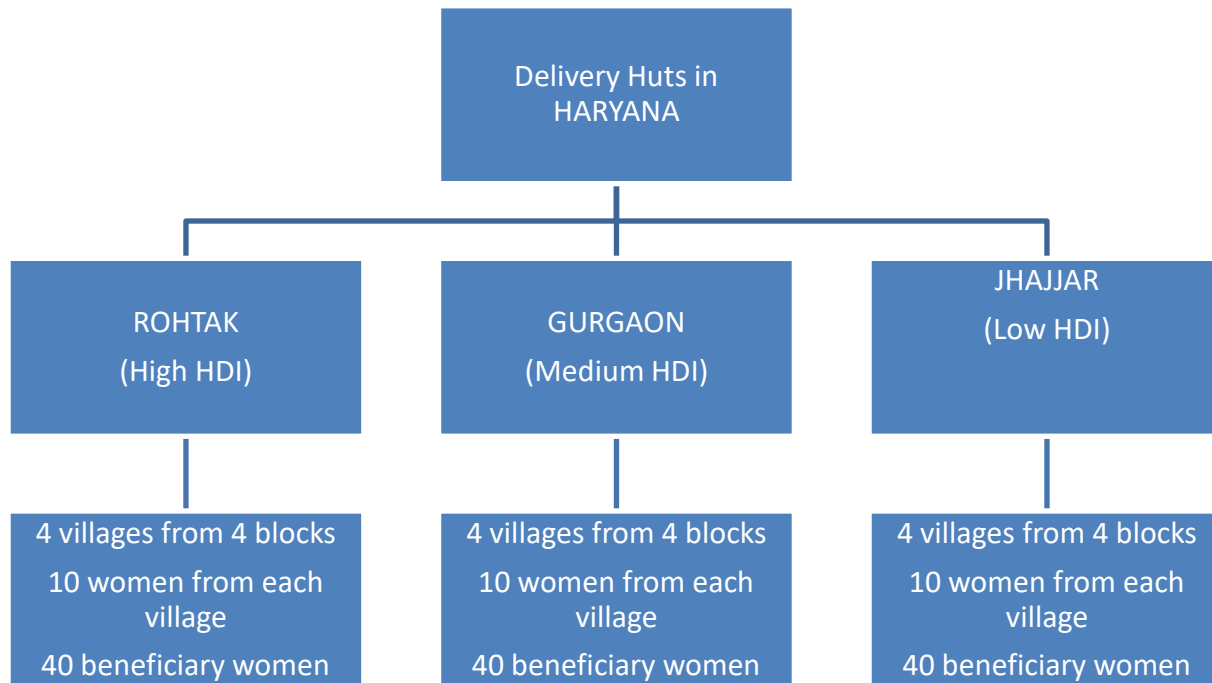
A study conducted in Rajasthan on JSY and cash transfer found that women who were uneducated, multiparous or lacked prior knowledge of the JSY program were significantly more likely to deliver at home (Sidney, et al, 2012). Another cross sectional study conducted in the tribal areas of Maharashtra found that utilization of ANC services and deliveries at health centers were significantly associated with education of the women and their spouses, and the socioeconomic status of the family (Mumbare & Rege, 2011). Aggarwal & Thind (2011) recommended that compared to cash incentives to increase facility-based delivery, improving maternal education may be a better way to achieve long term and sustained increase in facility deliveries in India. A study published by Saxena, Vangani, Mavalankar & Thomsen in 2013 that aimed at understanding the equity in access to maternal health in the state based on district level data found that structural determinants like caste group, wealth, and education were all significantly associated with access to the minimum three antenatal care visits, institutional deliveries, and use of any modern method of contraceptive<sup>7</sup>. The study also noted that there is a significant relationship between being poor and access to less utilization of ANC services independent of caste category or residence (Saxena, et al, 2013).

## **SIGNIFICANCE OF THE STUDY**

Hence, this particular paper based on an exploratory study, was sought to look at the knowledge, practices related to safe motherhood and determinants that affected these two with the background of the Delivery Huts scheme launched in Haryana. The scheme launched with the purpose of promoting institutional delivery and providing 24X7 access to delivery services aimed at providing comprehensive safe motherhood experience in rural Haryana. With the mechanism of Delivery Huts being there as a functional intervention, it was thought appropriate to understand the take account of the beneficiaries' knowledge and practices related to safe motherhood and their perception on the delivery huts to identify if the Delivery Hut scheme and its provisions have been able to penetrate into the beneficiaries' mindsets and their behaviours.

## **METHODOLOGY**

Since Delivery Hut scheme is a state specific scheme in Haryana, the study was carried out in the villages of three districts of the state based on their Human Development Index (HDI) scores. Accordingly, Rohtak (high HDI), Gurgaon (medium HDI) and Jhajjar (low HDI) were the selected districts for the study. From each of these districts, four villages were randomly selected from 4 respective blocks. From each of these villages ten women who had or were availing services from the Delivery Hut were interviewed, hence making the total sample size as 120 (See Chart 1).

**CHART 1: SAMPLING PLAN FOR STUDY**

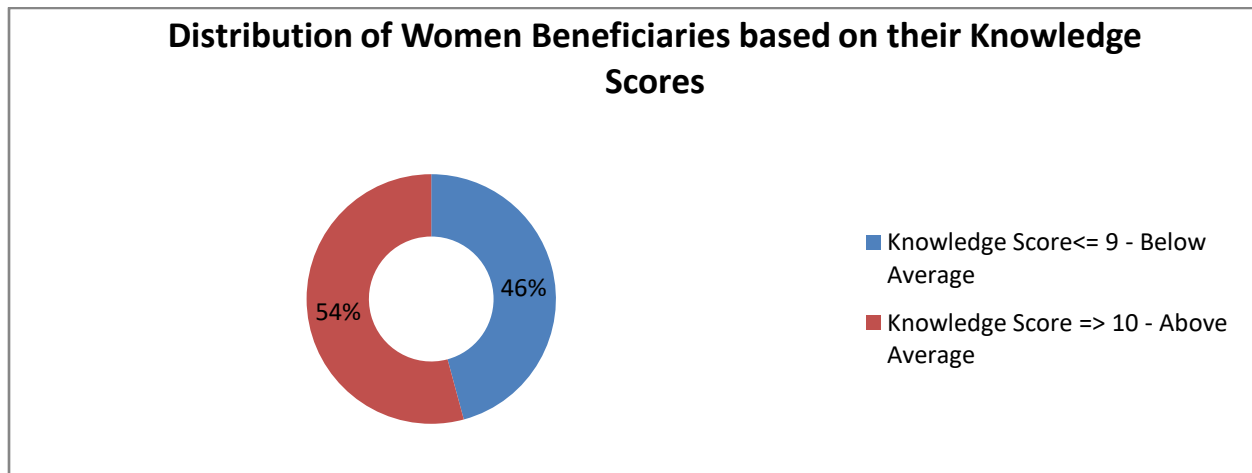
For assessing the knowledge related to safe motherhood a knowledge inventory was made. For the present study, fifteen statements pertaining to knowledge on safe motherhood were made, validated and then they were scored. Based on scores the knowledge of women was then ranked ( $\leq 9$ =Below Average &  $\geq 10$ =Above Average). Accordingly for each beneficiary woman, the knowledge scores were computed and then ranked. Further, determinants that impacted their knowledge scores were also found.

To assess the practices related to safe motherhood, a practice inventory was made. For the present study the practices of the women were adjudged through a tool containing twelve statements and then they were scored and ranked. Accordingly for each of the woman, her practices related to safe motherhood was given scores and then categorized in ranks; for example scores  $\leq 8$  were ranked below average and scores  $\geq 9$  were ranked above average. Thereafter determinants impacting the practices were also found.

## RESULTS AND DISCUSSIONS

### KNOWLEDGE ABOUT SAFE MOTHERHOOD

It was found that slightly more than half of them faired above average while a little less than half of them faired below average (See figure 1 below). This reflects that there was a mixed trend with majority of them doing exceedingly well in terms of their knowledge about safe motherhood and the other actually performing below the expected average. May be the former had delivered their child lately and so knew afresh about safe motherhood, or they received good information from the health workers, or may be they were in the target audience (like SC/ST) and were aware of the schemes specifically for them like the JSY.



**FIGURE 1: DISTRIBUTION OF WOMEN BENEFICIARIES BASED ON THEIR KNOWLEDGE SCORES**

### **DETERMINANTS THAT MADE A SIGNIFICANT DIFFERENCE TO THE KNOWLEDGE SCORES: PREGNANCY STATUS, CASTE AND POSSESSION OF LAND HOLDING**

#### **PREGNANCY STATUS**

It was seen that a larger proportion of women who had already delivered at the DH in past three months had more knowledge about safe motherhood practices as compared to those who were pregnant at the time of the study. From the table below (table 1) it can be seen that of the total sixty seven percent of the women who were pregnant, majority of them scored below average; while of the total 33% of the women who delivered at DH in the last 3 months, majority of them were ranked above average in terms of their knowledge on safe motherhood. The value of  $\chi^2$  for this association was 6.059 and it was found significant at  $p=.014$  at 5% level of significance. Hence it can be inferred that a significant difference is there in the knowledge scores of women who were pregnant and who had delivered their child at DH in last three months.

The possible reasons for this may be that those women who just delivered at DH in last three months were well versed with the cycle of pregnancy and delivery and had gone through all of it lately. Also they would be more familiar with the health workers and having opted for an institutional birth they may have also realized the importance of same.

**TABLE 1: ASSOCIATION OF KNOWLEDGE SCORES OF WOMEN BASED ON PREGNANCY STATUS**

Women Beneficiary - Pregnancy Status		Knowledge Score - Category		Total
		<= 9 - Below Average	=> 10 - Above Average	
Pregnant	Count	43	37	80

	% of Total	35.8%	30.8%	66.7%
Delivered at DH in last 3 months	Count	12	28	40
	% of Total	10.0%	23.3%	33.3%
Total	Count	55	65	120
	% of Total	45.8%	54.2%	100.0%

$\chi^2=6.059$ ,  $df=1$ ,  $p=.014$  (which is  $\leq .05$ )

On the other hand those who were pregnant may have been more anxious and apprehensive as they may not know much about it not having gone through the entire cycle. Some of these may have just come to know about their pregnancy and may not even know about ANC and the health workers.

### CASTE

Majority of the women beneficiaries were Jats which is the dominant caste in Haryana and considered the elite of the villages as they generally hold agricultural land. A little less than one third of them belonged to SC/ST category and the remaining were distributed among the OBC and others. A significant difference was observed between the knowledge score of these women with respect to their caste at 5% level of significance ( $\chi^2=10.984$ ,  $df=3$ ,  $p=.012$  (which is  $\leq .05$ )). It was seen that fourteen percent of the total Jat women (36%), nine percent of the total OBCs (18%), twenty three percent of the total SC/STs and eight percent of the total “others” (16%) scored above 10 and were ranked in above average category (table 2). Further, it can be interpreted that three fourths of the SC/ST population (28/37) scored above average which is the largest in any other caste. Probable reason for this lower caste to score high could be their appropriateness for being the beneficiaries for financial incentives under JSY, so they may either have received good information from health workers or may they themselves have been proactive to act in this regard. Also these are the ones who are in need of free health services so probably they may be going to the health centre to access free services.

**TABLE 2: ASSOCIATION OF KNOWLEDGE SCORES OF BENEFICIARY WOMEN BASED ON THEIR CASTE**

Caste Category		Knowledge Score – Category		Total
		$\leq 9$ (Below Avg)	$\geq 10$ (Above Avg)	
Jat	Count	26	17	43
	% of Total	21.7%	14.2%	35.8%
OBC	Count	10	11	21
	% of Total	8.3%	9.2%	17.5%
SC/ST	Count	9	28	37
	% of Total	7.5%	23.3%	30.8%

Any Other	Count	10	9	19
	% of Total	8.3%	7.5%	15.8%
Total	Count	55	65	120
	% of Total	45.8%	54.2%	100.0%

$\chi^2=10.984$ ,  $df=3$ ,  $p=.012$  (which is  $\leq .05$ )

The OBCs ranked second in terms of the percentage and since this being too a backward class, may be they too deemed free of cost services essential and interacted with the health workers often and hence were abreast with knowledge about safe motherhood. The Jats on the other hand, being financially stable, may not be willing to have an institutional delivery at a DH or perhaps may have made alternate arrangements for delivery in a private health setting and hence may not be bothered about seeking more than necessary information about safe motherhood services at the DH and therefore majority of them scored below average.

### POSSESSION OF LAND HOLDING

Land holding of a family reflects its economic status. The more the landholding a family has, the richer the family is. It was seen that a significant difference existed in the knowledge scores of the women with respect to absence or presence of land holding. The  $\chi^2$  value for this association was 3.994 that was found significant ( $p=.046$ ) at 5% level of significance (Refer Table 3).

Of the total sample, about seventy one percent's family did not own any land and of this 42.5% of the respondents scored above average whereas 28.3% scored below average. This reflects that those with poorer or limited means wish to resort to services that are free of cost and yields them incentives too. Perhaps, they agree with the fact that availability of free services at a DH is meant for them and does not create a hole in their pocket, they visit there often and interact with the staff more to know what is being offered to them; and probably that is the reason as to why this group had a higher knowledge score. Of the total sample twenty nine percent of the women's families possessed a land holding which was an asset to them and thus made them financially strong. Of this about seventeen percent scored below average and only 12% scored above average. This is indicative that those who have land holdings can afford services by paying for them an advanced facility and may be they prefer it more over a government facility with limited resources and free services. Probably the latter do not wish to benefit directly from the DHs and did not seek information about safe motherhood services being offered by it.

**TABLE 3: ASSOCIATION OF KNOWLEDGE SCORES OF WOMEN BENEFICIARIES BASED FAMILY'S POSSESSION OF LAND HOLDING**

Land holding		Knowledge Score - Category		Total
		<= 9 Below Avg	=> 10-Above Avg	
Yes	Count	21	14	35
	% of Total	17.5%	11.7%	29.2%



<b>No</b>	<b>Count</b>	34	51	85
	<b>% of Total</b>	28.3%	42.5%	70.8%
<b>Total</b>	<b>Count</b>	55	65	120
	<b>% of Total</b>	45.8%	54.2%	100.0%

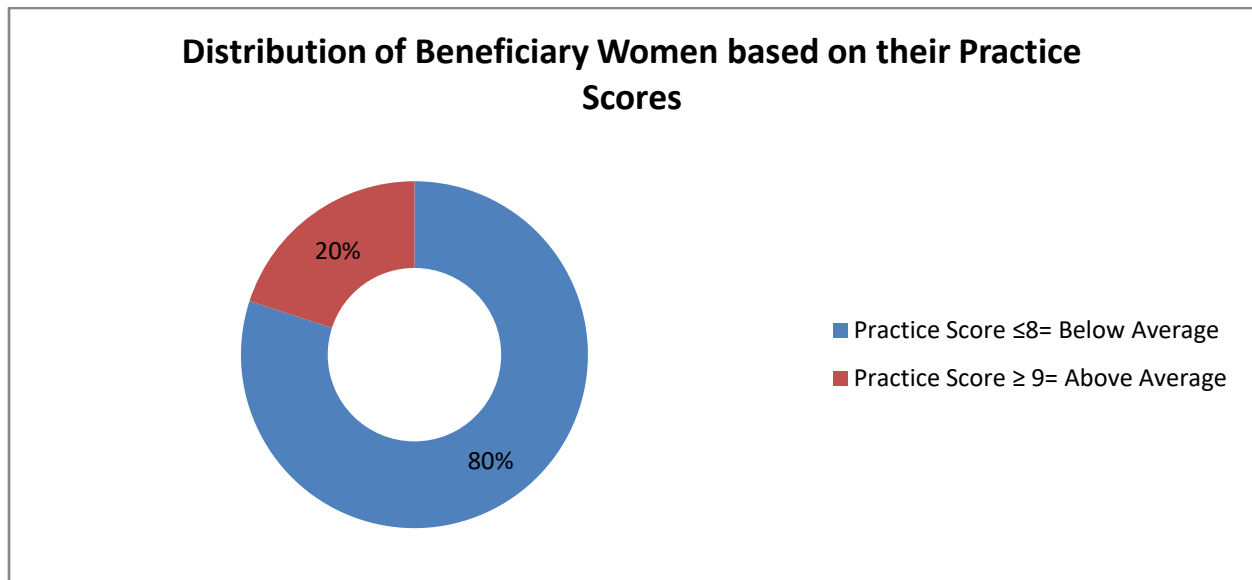
$\chi^2=3.994$ ,  $df=1$ ,  $p=.046$  (which is  $\leq .05$ )

### **DETERMINANTS THAT DID NOT MAKE A SIGNIFICANT DIFFERENCE TO THE KNOWLEDGE SCORES**

It was seen that the other presumed determinants that may have made a significant difference in the knowledge scores of the beneficiary women like their age, educational qualification, parity of the child, occupation and house ownership did not significantly effect the knowledge scores. Their chi-square values were insignificant at 5% level of significance. At the grassroots, determinants like caste and land holding influence the access of services and the knowledge about the same. While caste may impact the upbringing of an individual and the social dynamics also; landholding reflects the economic status and opportunities and resources available to access free or paid health services. We can further infer from this analysis that other than the parity of the child, whether it's first, 2<sup>nd</sup> or 3<sup>rd</sup>, what affects the knowledge about safe motherhood is how recent the pregnancy experience has been. Fresher experience of a pregnancy gave a higher recall value to the women and hence they were more updated. It was seen that women who just delivered in last three months were more updated in their knowledge about safe motherhood rather than those who were pregnant at that time irrespective of the parity of their child.

### **PRACTICE RELATED TO SAFE MOTHERHOOD**

Common practices that can ensure a safe motherhood are an early ANC registration and timely ANC visits, enquiring about delivery facility, making an alternate arrangement for delivery, seeking family planning after child birth and accessing the nearest health centre for immunization and other illness that may fall in line of pregnancy. It was observed that eighty percent of the women scored below average and 20% of the women scored above average in terms of their practices related to safe motherhood.



**FIGURE 2: DISTRIBUTION OF BENEFICIARY WOMEN BASED ON THEIR PRACTICE SCORES**

**DETERMINANTS THAT MADE A SIGNIFICANT DIFFERENCE TO THE PRACTICE SCORES: PREGNANCY STATUS, PARITY OF THE CHILD, LAND HOLDING & KNOWLEDGE SCORE**

**PREGNANCY STATUS**

It was seen that a larger proportion of women who had already delivered at the DH in past three months practiced safe motherhood more as compared to those who were pregnant at the time of the study. From the table below it can be seen that of the total sixty seven percent of the women who were pregnant, majority of them scored above average; while of the total 33% of the women who delivered at DH in the last 3 months, majority of them were ranked above average in terms of their practices related to safe motherhood (Table 4). The value of  $\chi^2$  for this association was 8.438 and it was found significant at  $p=.004$  at 5% level of significance.

**TABLE 4: ASSOCIATION OF PRACTICE SCORES OF WOMEN BENEFICIARIES' BASED ON PREGNANCY STATUS**

Women Beneficiary - Pregnancy Status		Practice Score – Category		Total
		≤8-Below Avg	≥9-Above Avg	
Pregnant	Count	22	58	80
	% of Total	18.3%	48.3%	66.7%
Delivered at DH in last 3 months	Count	2	38	40
	% of Total	1.7%	31.7%	33.3%
Total	Count	24	96	120

	<b>% of Total</b>	<b>20.0%</b>	<b>80.0%</b>	<b>100.0%</b>
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$\chi^2=8.438$ ,  $df=1$ ,  $p=.004$  (which is  $\leq .05$ )

Hence it can be inferred that a significant difference is there in the practice scores of women who were pregnant and who had delivered their child at DH in last three months. The possible reasons for this may be that those women who just delivered at DH in last three months were well versed with the practices related to pregnancy and delivery and had gone through all of it lately. Also they would have had more interaction with the health workers and having opted for an institutional birth they practiced safe motherhood actions better. On the other hand those who were pregnant may not have been able to form a rapport with the health workers and weren't aware of the care required during pregnancy and child birth. Some of these may have just come to know about their pregnancy and may not even have registered for ANC or made alternate arrangements for delivery.

### PARITY OF THE CHILD

Parity of the child is the order of the child to be born. Parity of the child may explicitly influence the practice of a mother in following ways: If the mother is pregnant for the first time, she is bound to be apprehensive about her practices and may not be able to practice safe motherhood behaviour; then, if the mother is pregnant for the second or 3<sup>rd</sup> time, she already has gone through the cycle of pregnancy and knows what is to be done. Hence, her practices may tend to improve with the higher parity. On the other hand, reverse may also happen; those who are pregnant for the first time may get extra cautious about their pregnancy while those who are pregnant for the 3<sup>rd</sup> or 4<sup>th</sup> time may get over confident and may carelessly proceed with their pregnancy, resulting in a casual attitude towards the same. A significant difference was found between the practice scores of the women and the parity of the child ( $\chi^2=6.417$ ,  $df=2$ ,  $p=.040$ ) at 5% level of significance.

From the table below (5) it can be seen that of the total fifty two percent of women who were pregnant for the first time, most of them, i.e. 37.5% scored above average. May be these women were cautious about being pregnant for the first time and practiced safe motherhood behaviour to ensure a healthy birth outcome. Similarly, for the remaining half of the women who were pregnant either for the second or the third time, majority of these too scored above average only. This only highlights that repeated pregnancies may have given them a fair idea about the process and the healthier practices they needed to adopt to ensure a safe motherhood. On the other hand a meagre percentage of second and third gravid scored less than the average which is only suggestive that may be these women had a laid back attitude towards their pregnancy.

**TABLE 5: ASSOCIATION OF PRACTICE SCORES OF WOMEN BENEFICIARIES' BASED ON PARITY OF THE CHILD**

Parity of the child under consideration		Practice Score – Category		Total
		<=8-Below Avg	=>9-Above Avg	
<b>First</b>	<b>Count</b>	18	45	<b>63</b>
	<b>% of Total</b>	15.0%	37.5%	<b>52.5%</b>
	<b>Count</b>	5	35	<b>40</b>

<b>Second</b>	<b>% of Total</b>	4.2%	29.2%	<b>33.3%</b>
<b>Third</b>	<b>Count</b>	1	16	<b>17</b>
	<b>% of Total</b>	0.8%	13.3%	<b>14.2%</b>
<b>Total</b>	<b>Count</b>	<b>24</b>	<b>96</b>	<b>120</b>
	<b>% of Total</b>	<b>20.0%</b>	<b>80.0%</b>	<b>100.0%</b>

$\chi^2=6.417$ ,  $df=2$ ,  $p=.040$  (which is  $\leq .05$ )

### POSSESSION OF LANDHOLDING

As already found in case of knowledge of the women related to safe motherhood, land holding of a family which is reflective of its economic status is a strong determinant in case of practices related to safe motherhood in context of agricultural families. The more the land holding a family has, it is financially more stable. It was seen that a significant difference existed in the practice scores of the women with respect to absence or presence of land holding. The  $\chi^2$  value for this association was 9.076 that was found significant ( $p=.003$ ) at 5% level of significance (Refer Table 6).

Of the total sample, about seventy one percent did not own any land and of this 61.7% of the women scored above average whereas only 9.2% scored below average. This reflects that those that had limited assets may have resorted to services that are free of cost and were incentive driven. Perhaps, being the vulnerable target group, they could ascertain the free services being provided at the DH and knew that it was the best they could get with their limited means.

**TABLE 6: ASSOCIATION OF PRACTICE SCORES OF BENEFICIARY WOMEN BASED ON FAMILY'S POSSESSION OF LAND HOLDING**

Land holding		Practice Score – Category		Total
		$\leq 8$ - Below Avg	$\geq 9$ -Above Avg	
<b>Yes</b>	<b>Count</b>	13	22	<b>35</b>
	<b>% of Total</b>	10.8%	18.3%	<b>29.2%</b>
<b>No</b>	<b>Count</b>	11	74	<b>85</b>
	<b>% of Total</b>	9.2%	61.7%	<b>70.8%</b>
<b>Total</b>	<b>Count</b>	<b>24</b>	<b>96</b>	<b>120</b>
	<b>% of Total</b>	<b>20.0%</b>	<b>80.0%</b>	<b>100.0%</b>

$\chi^2=9.076$ ,  $df=1$ ,  $p=.003$  (which is  $\leq .05$ )

Hence they visited the DH often and interacted with the staff more to understand and avail what is being offered to them; and probably that is the reason as to why this group had a high practice score. On the contrary of the total sample twenty nine percent of the women from families with a land holding which was an asset to them and thus made them financially strong. Of this about eighteen percent scored above average and only 11% scored below average. This is indicative that those who

have land holdings can afford services by paying for them an advanced facility and may be they prefer it more over a government facility with limited resources and free services. Specifically for the child birth most of these had made alternate arrangements for the delivery and wanted to avert any kind of risk and hence, DH may have been their access point only limited till availing free ANC and family planning services.

### KNOWLEDGE SCORES

Practice gets influenced with knowledge. The more the information we have the more we tend to apply it in our practices. Similar is the case in safe motherhood. If a woman knows about the importance of institutional delivery and understands it she would go against all odds to ensure she has an institutional birth. A significant correlation between knowledge and practice scores was observed in the present study too. The value of Pearson Correlation  $r$  was .518 with  $p=.000$  which was significant at 1% level of significance (Refer Table 7). Hence it can be inferred that practices of the mothers were dependent on their knowledge related to safe motherhood.

**TABLE 7: CORRELATION BETWEEN KNOWLEDGE SCORES AND PRACTICE SCORES OF BENEFICIARY WOMEN**

N=120		Knowledge Score	Practice Score
<b>KNOWLEDGE SCORE</b>  Mean=9.4917 Std Dev=1.93593	Pearson Correlation	1	.518**
	Sig. (2-tailed)		.000
	N	120	120
<b>PRACTICE SCORE</b>  Mean=10.2083 Std Dev=1.48887	Pearson Correlation	.518**	1
	Sig. (2-tailed)	.000	
	N	120	120

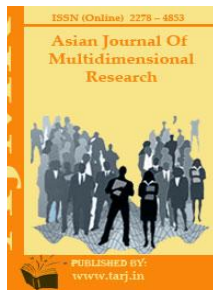
\*\* . Correlation is significant at the 0.01 level (2-tailed).

### CONCLUSION

The particular study deduced that knowledge and practices of women related to safe motherhood were significantly correlated and were dependent on caste, status of pregnancy, parity of child and land holding. At the grassroots, determinants like caste and economic status (reflected by owning a land) govern the ability to access free-government sponsored health facilities or go for a paid higher private/government facility; and hence it strongly influenced a woman's intention to deliver at the Delivery Hut. Thus, all these aspects must be taken into consideration while planning an intervention and the facilities and behaviour change strategies should be tailored according to the differentials of social groups paying more thrust on quality along with quantity.

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## RIGHT TO INFORMATION ACT, 2005 - CONCEPTS & ISSUES IN INDIA

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### ABSTRACT

*It's right time to answer to the question..... Is India a Democratic Country? Indian Constitution proudly speaks India is a Democratic country. But is it really true??... What made me to ask this question? – How Democratic is Indian polity? It is because Indian polity has failed to provide solutions to the common man's problems. If a government teacher does not teach properly, can the parents do anything about it? Or if a doctor in a government hospital does not treat properly or does not give medicines what action can be taken against him? Or what can any one of us do if the policeman refuses to register our FIR or registers a false case against us? We cannot do anything about it. We can only complain to the higher authorities who do not act upon our complaints or who rarely act upon it. So, the citizens do not have any control over government employees. Some of us feel that this country would be a better place to live in if we had good politicians and bureaucrats. However, real change can come only when the people of this country hold their government and public servants accountable, so that they are forced to respond to the poorest citizen of this land. And when that happens, no public servant or government would dare to be corrupt, inefficient or insensitive.*

### **BUT HOW DO WE HOLD THE GOVERNMENT ACCOUNTABLE?**

*Thomas Jefferson rightly said... "Information is the currency of democracy." We cannot even begin to make the government accountable if we do not have the basic information regarding government decisions and functioning. But, is it possible for an ordinary citizen to get right information in this regard?. Yes! The Right to Information Act that was passed by Indian Parliament in May 2005 empowers us to do just that. It gives us the right to question our Government and get information about matters that affect us in thousands of ways. Used innovatively, this information can then be used to hold our Government accountable. In State of U.P Vs Raj Narain Supreme Court has observed..... "In a government of responsibility like ours where the agents of the public must be responsible for their conduct there can be but a few secrets. The people of this country have a right*



*to know every public act, everything that is done in a public way by their public functionaries. They are entitled to know the particulars of every public transaction in all its bearings.” Right to Information is a small concrete step in making our polity more democratic. It has given power to the people to “just question” the government. The main objective of this paper is to create Awareness regarding “Right to Information Act” through which much of the common man’s day to day life problems can be solved thereby making our country really democratic. The paper is more of application oriented rather than mere descriptive of the act.*

**KEYWORDS:** Information, Appeal, Public Information Officers (PIO), Assistant Public Information Officers (APIOs), Appellate authority.

## INTRODUCTION

We blame the politicians and administrators who keep our nation still a developing country. I know every reader of this paper wish is to make India – a well developed nation, development as a whole and not as a part! I strongly appreciate your wish but what action we people took to bring our wish into reality. Definitely the answer is No! How many of us dare to question the politicians and bureaucrats when they remain unaccountable, inefficient and Corruptive? The real problem not because that we are afraid of them but we don’t know whether we have right to question them? There comes darkness. Darkness I mean „Ignorance“- Ignorance the root and stem of every evil. Ignorance is not innocence but it is sin. Today we the public suffers a lot. It is because of our ignorance, Ignorance on our rights, freedom and moreover on information.

“It is better to light a candle than curse the darkness” Sure! Right to information Act acts as a small candle which throws out the darkness prevailed in our society. “If you have knowledge, let others light their candles by it.” This is the philosophical underpinning of the freedom of movement. Freedom of information and in particular, the right of access to information held by public bodies, has attracted a substantial amount of attention recently. In the past several years, many countries have taken steps to enact legislation giving effect to this. By doing so, these countries join others around the world which have a long tradition to right to information, such as Sweden, the United States, Finland, the Netherlands, Australia and Canada.[1] We all pay taxes. Even a beggar on the street pays sales tax when he buys anything from the market. This money belongs to us. But where does this money go? Why are there no medicines in the hospitals? Why are people dying of starvation? Why are the roads in such pathetic conditions? Why are the taps dry? Now we have a right to question governments. The Parliament of India has passed Right to Information Laws, which empower citizens to question the government, inspect their files, and take copies of government documents and also to inspect government works.

## HISTORICAL APPROACH

It has taken India 82 years to transition from an opaque system of governance, legitimized by the colonial Official Secrets Act, to one where citizens can demand the right to information. Right to Information is derived from our fundamental right of freedom of speech and expression under Article 19 of the Constitution. If we do not have information on how our Government and Public Institutions function, we cannot express any informed opinion on it. Democracy revolves around the basic idea of Citizens being at the center of governance. And the freedom of the press is an essential

element for a democracy to function. It is thus obvious that the main reason for a free press is to ensure that Citizens are informed. Thus it clearly flows from this, that the Citizens Right to Know is paramount. In order to ensure greater and more effective access to information, it was decided to repeal the Freedom of Information Act, 2002 and enact another law for providing an effective framework. To achieve this object, the Right to Information Bill was introduced in the Parliament and was passed by the Lok Sabha on 11th May, 2005 and by the Rajya Sabha on 12th May, 2005 and it received the assent on 15th June, 2005. It came on the Statute Book as THE RIGHT TO INFORMATION ACT, 2005. The primary power of RTI is the fact that it empowers individual Citizens to requisition information. Hence without necessarily forming pressure groups or associations, it puts power directly into the hands of the foundation of democracy- the Citizen.

### **THEORETICAL APPROACH WHERE THE ACT APPLIES?**

The Act applies both to Central and State Governments and all public authorities.

### **INFORMATION- DEFINITION**

The Act defines information in sec. 2(f) as any material in any form, including the records, documents, memos, e-mails, opinions, advices, press releases, circulars, orders, log books, contracts, reports, papers, samples, models, data material held in any electronic form and information relating to any private body which can be accessed by a public authority under any law for the time being in force. Sec. 2(i) defines the word „record“ as including (a) any document, manuscript and file, (b) any microfilm, microfiche and facsimile copy of a document, (c) any reproduction of image or images embodied in such microfilm and (d) any other material produced by a computer or any other device. [2]

### **RIGHT TO INFORMATION- DEFINITION**

It is defined in sec. 2(j) as a right to information accessible under the Act which is held by or under the control of any public authority and includes a right to (i) inspection of work, documents, records, (ii) taking notes, extracts or certified copies of documents or records, (iii) taking separate samples of material, (iv) obtaining information in the form of diskettes, floppies, tapes, video cassettes or in any other electronic mode or through printouts where such information is stored in a computer or in any other device.

### **MAINTENANCE AND PUBLICATION OF RECORDS**

Sec. 4 makes it a duty of public authorities to maintain records for easy access and to publish within 120 days the name of the particular officers who should give the information and in regard to the framing of the rules, regulations etc.

Subsection (3) of sec. 4 states that for the performance of subsection (1), all information shall be disseminated widely and in such form and manner, which is easily accessible to the public.

Sec. 6 permits persons to obtain information in English or Hindi or in the official language of the area from the designated officers. The person need not give any reason for the request or any personal details.

Sec. 7 requires the request to be disposed of within 30 days provided that where information sought for concerns the life or liberty of a person, the same shall be provided within 48 hours.

Under sec. 7(7) before any decision is taken for furnishing the information, the designated officer shall take into consideration the representation, if any, made by a third party under sec. 11.

A request rejected shall be communicated under sec. 7(8) giving reasons and specifying the procedure for appeal and the designation of the appellate authority. Sec. 7(9) exempts granting information where it would disproportionately divert the resources of the public authority or would be detrimental to the safety and preservation of the record in question.

**EXEMPTIONS:** Sec. 8 exempts from disclosure certain information and contents as stated in Sub-clauses (a) to (j) thereof. Sub-clause (b) exempts information, which is expressly forbidden by any court of law or tribunal or the dispute of which may constitute contempt of court. Sub-clause (g) exempts information the disclosure of which would endanger life, or physical safety of any person or identify the source of information or assistance given in confidence for law enforcement or security purpose. Sub-clause (h) exempts information, which could impede the process of investigation or apprehension or prosecution of offenders. Sub-clause (i) exempts Cabinet papers. It is important to note that the Act specifies that intelligence and security organizations are exempted from the application of the Act. However, it is provided that in case the demand for information pertains to allegations of corruption and human rights violations, the Act shall apply even to such institutions.

### **RIGHT TO APPEAL**

Under the Act, where a citizen has exhausted the remedy of appeal or second appeal, the finality given to the orders of the commissioners and appellate authorities is only for the purposes of the Act and the citizen has a right to approach the High Court under Art. 226 or where it refers to a fundamental right, he may even approach the Supreme Court under Art. 32.

### **CONSTITUTIONAL APPROACH**

The right to information is a fundamental right flowing from Art. 19(1)(a) of the Constitution is now a well-settled proposition. Over the years, the Supreme Court has consistently ruled in favor of the citizen's right to know. The nature of this right and the relevant restrictions thereto, has been discussed by the Supreme Court in a number of cases:

In Bennett Coleman, the right to information was held to be included within the right to freedom of speech and expression guaranteed by Art. 19 (1) (a).

In Raj Narain, the Court explicitly stated that it is not in the interest of the public to „cover with a veil of secrecy the common routine business - the responsibility of officials to explain and to justify their acts is the chief safeguard against oppression and corruption.

In S.P. Gupta, the right of the people to know about every public act, and the details of every public transaction undertaken by public functionaries was described.

### **NEED OF THE STUDY**

In recent years, there has been an almost unstoppable global trend towards recognition of the right to information by countries, intergovernmental organizations, civil society and the people [3]. The right to information has been recognized as a fundamental human right, which upholds the inherent dignity of all human beings. The right to information forms the crucial underpinning of participatory democracy - it is essential to ensure accountability and good governance [4]. The greater the access

of the citizen to information, the greater the responsiveness of government to community needs. Alternatively, the greater the restrictions that are placed on access, the greater the feelings of 'powerlessness' and 'alienation'. Without information, people cannot adequately exercise their rights as citizens or make informed choices [5]. However, the free flow of information remains severely restricted by three factors:

The legislative framework includes several pieces of restrictive legislation, such as the Official Secrets Act, 1923;

The pervasive culture of secrecy and arrogance within the bureaucracy; and

The low levels of literacy and rights awareness amongst India's people.

### **PRACTICAL APPROACH**

How does the Right to Information (RTI) Act help us? RTI Act gives us the right to ask the Government for information that can expose inaction and corruption, and address our grievances. Under the RTI Act we can:

Demand from the government information pertaining to any of its departments.

Demand photocopies of government contracts, payment, estimates, measurements of engineering works etc

Demand from the government samples of material used in the construction of roads, drains, buildings etc.

Demand to inspect any public development work that may be still under construction or completed.

Demand to inspect government documents- construction drawings, records books and registers etc.

Demand status of your requests or complaints.

### **ARE PRIVATE BODIES COVERED UNDER THE RTI ACT?**

All private bodies, which are owned, controlled or substantially financed by the Government, are directly covered. Others are indirectly covered. That is, if a government department can access information from any private body under any other Act, the same can be accessed by the citizen under the RTI Act through that government department.

### **WHO WILL GIVE ME NECESSARY INFORMATION?**

One or more existing officers in every Government Department have been designated as Public Information Officers (PIO). These PIOs act like nodal officers. We have to file our applications with them. They are responsible for collecting information sought by us from various wings of that Department and providing that information to us. In addition, several officers have been appointed as Assistant Public Information Officers (APIOs). Their job is only to accept applications from the public and forward it to the right PIO.

### **WHERE DO I SUBMIT APPLICATION?**

We can do that with the PIO or with APIO. In the case of all Central Government Departments, 629 post offices have been designated as APIOs. This means that we can go to any of these post offices and submit your fee and application at the RTI counter in these post offices. They will issue us a

receipt and acknowledgement and it is the responsibility of that post office to deliver it to the right PIO. The list of these post offices is given at

<http://www.indiapost.gov.in/rtimanual16a.html>

### **IS THERE ANY FEE? HOW DO I DEPOSIT THAT?**

Yes, there is an application fee. For Central Government Departments, it is Rs 10. However, different states have prescribed different fee. For details see rules framed by the states on this website. For getting information, we have to pay Rs 2 per page of information provided for Central Government Departments. It is different for different states. Similarly, there is a fee for inspection of documents. There is no fee for first hour of inspection, but after that, we have to pay Rs. 5 for every subsequent hour or fraction thereof. This is according to Central Rules. For each state, see respective state rules. We can deposit fee wither in cash or through a DD or bankers cheque or postal order drawn in favor of that public authority. In some states, we can buy court fee stamps and affix it on our application. This would be treated as if we have deposited the fee. We can then deposit our application either by post or by hand.

### **WHAT SHOULD I DO IF THE PIO OR THE CONCERNED DEPARTMENT DOES NOT ACCEPT MY APPLICATION?**

We can send it by post. We should also make a formal complaint to the respective Information Commission under section 18. The Information Commissioner has the power to impose a penalty of Rs 25000 on the concerned officer who refused to accept our application.

### **IS THERE AN APPLICATION FORM FOR SEEKING INFORMATION?**

For Central Government Departments, there is no form. We should apply on a plain sheet of paper like an ordinary application. However, many states and some ministries and departments have prescribed formats. We should apply in these formats. We should read rules of respective states to know about it.

### **HOW CAN I APPLY FOR INFORMATION?**

Draft our application on a normal sheet of paper and submit it by post or in person to the Public Information Officer (PIO). Remember to keep a copy of the application for our personal reference.

### **CAN I SUBMIT MY APPLICATION ONLY WITH THE PIO?**

No, in case the PIO is not available we can submit our application with the Assistant PIO or any other officer designated to accept the RTI applications.

### **WHERE CAN I LOCATE THE CONCERNED PIO?**

A list of PIOs/APIOs and Appellate Authorities for all Central and State departments/Ministries is available online at [www.rti.gov.in](http://www.rti.gov.in)

### **WHAT IF I CANNOT LOCATE MY PIO OR APIO?**

In case we have problems locating your PIO/APIO we can address our RTI application to the PIO C/o Head of Department and send it to the concerned public authority with the requisite application fee. The Head of Department will have to forward our application to the concerned PIO.

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**DO I HAVE TO PERSONALLY GO TO DEPOSIT MY APPLICATION?**

Depending on our state rules for mode of payment we can deposit our application for information from the concerned departments of our state government via post by attaching a DD, Money Order, Postal Order or affixing Court fee Stamp. For all Central government departments the Department of Posts has designated 629 postal offices at the national level. The designated officers in these post offices work as Assistant PIOs and collect the application to forward to the concerned PIO. A list is available on <http://www.indiapost.gov.in/rticontents.html>

**IS THERE A TIME LIMIT TO RECEIVING INFORMATION?**

Yes. If we file our application with the PIO, we must receive information within 30 days. In case we have filed our application with Assistant PIO then information has to be made available within 35 days. In case the matter to which the information pertains affects the life and liberty of an individual, information has to be made available in 48 hours.

**DO I HAVE TO GIVE REASONS WHY I WANT PARTICULAR INFORMATION?**

Absolutely not! We are not required to give any reasons or additional information other than our contact details (i.e., Name, Address, and Phone No.). Sec 6(2) clearly says that no information other than contact details of the applicant shall be asked.

**CAN THE PIO REFUSE TO ACCEPT MY RTI APPLICATION?**

No. The PIO cannot refuse to accept our application for information under any circumstances. Even if the information does not pertain to his/her department/jurisdiction, she/he has to accept it. If the application does not pertain to that PIO, he would have to transfer it to the right PIO within 5 days under sec 6(2).

**WHAT SHOULD I DO IF I DO NOT RECEIVE SATISFACTORY INFORMATION OR IF I DO NOT RECEIVE INFORMATION?**

If we do not receive information or are dissatisfied with the information received, we can file an appeal with the first appellate authority under section 19 (1) of the right to Information Act.

**WHAT SHOULD I DO AFTER GETTING INFORMATION?**

There cannot be one answer for that. It depends on why we asked for that information and what type of information is it. Often a lot of things start falling in place just by asking for information. For instance, we would get our passport or a ration card just by asking for the status of our application. In many cases, roads got repaired as soon as the money spent on its repairs in the last few repairs was asked. So, seeking information and questioning the government is an important step, which in itself is complete in many cases. But suppose we expose some corruption or wrongdoing using RTI. Then, we can complain to vigilance agencies, CBI or even file an FIR. But it is seen that the Government does not take any action against the guilty even after repeated complaints. Though one can keep up the pressure on vigilance agencies by seeking to know the status of complaints under RTI, however, the wrongdoings can also be exposed through media. However, experience has not been very encouraging at getting guilty punished. But one thing is certain. Seeking information like this and exposing wrongdoings does improve the future. The officials get a clear message that the



people of that area have become alert and any wrongdoings in future would not remain hidden as they were in the past. So, their risks of getting caught increase.

### **PRACTICAL CASE ON IMPLICATION OF THE ACT GETTING A RATION CARD**

Nannu is a daily wage earner. He lives in Welcome Mazdoor Colony, a slum habitation in East Delhi. He lost his ration card and applied for a duplicate one in January 2004. He made several rounds of the local Food & Civil Supplies office for the next three months. But the clerks and officials would not even look at him. Ultimately, he filed an application under the Right to individual, information has to be made available in 48 hours.

Information Act asking for the daily progress made on his application, names of the officials who were supposed to act on his application and what action would be taken against these officials. Within a week of filing application under Right to Information Act, he was visited by an inspector from the Food Department, who informed him that the card had been made and he could collect it from the office. When Nannu went to collect his card next day, he was given a very warm treatment by the Food & Supply Officer (FSO), who is the head of a Circle. The FSO handed over the card to Nannu, offered him tea and requested him to withdraw his application under Right to Information, since his work had already been done.

### **RECENT GLOBAL TRENDS ON INFORMATION ACT**

Since the 1980s, the collapse of authoritarianism and the emergence of new democracies have given rise to new constitutions that include specific guarantees of the right to information. At the same time, older democracies such as the United Kingdom are seeing the wisdom of enacting legislation. International bodies such as the Commonwealth, Council of Europe and the Organization of American States have drafted guidelines or model legislation to promote freedom of information. The World Bank, the International Monetary Fund and other donors are also pressing countries to adopt access to information laws as part of an effort to increase transparency and reduce corruption. Finally, there is agitation from media and civil society groups for greater access to government-held information and for more participation in governance. 9/11 has actually led some countries to limit information access. The restrictions have been most profound in the United States and Canada where proposals to limit national and local freedom of information acts have been adopted. In the UK, implementation of the long-awaited information act has been delayed until 2005.

### **CONCLUSION**

I am sure this paper will definitely serve its purpose. That is creating awareness on Right to information Act. Yes, Right to Information Act has moved our country from an opaque and arbitrary system of government to the beginning of an era where there will be greater transparency and to a system where the citizen will be empowered and the true center of power. Without widespread education and awareness about the possibilities under the Act, it could just remain on paper. The real democracy will come not by acquisition of authority by a few but by the acquisition of capacity by all to resist authority when abused. If every citizen had such capacity then we can proudly say..... "India is a democratic country in reality".



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## TEACHER-TAUGHT RELATIONS IN GOVERNMENT SCHOOLS: PERCEPTION OF STUDENTS OF SECONDARY CLASSES

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### ABSTRACT

*Teacher-Taught relations have, ever, remained an aspect of interest for the teachers, students, school administration, parents and community at large not only since the times of introduction of formal schooling but even since the times of informal learning practices followed by the society. Going by attachment theory (Ainsworth, 1982; Bowlby, 1969)<sup>1</sup>, positive teacher-taught relationship enable the students to feel safe and secure in their learning environments and set the stage for important social and academic outcomes. The positive bonding of teachers with their students turns the classroom into a supportive space to learn. The government schools have their own stereo-typed work culture which does not provide much of initiative taking and venturing in the academic sphere as a result students find a relationship gap especially the students of senior classes due to the adolescent requirements. This paper has attempted to examine the relations of students of secondary classes in government schools with their teachers in the context of classroom environment.*

### INTRODUCTION

The Best teacher draw best out of their students by unlocking student potentials and this is possible only if there exists positive teacher-taught relationship. The relationships between the two are defined by emotions- based experiences that emerge out of teachers' on going interactions with their students (Pianta 1999).<sup>2</sup> It is of paramount importance that teacher and taught should work for trusting relationship with each other which is time consuming and challenging exercise. A trusting classroom environment with mutual respect for each other is thriving classroom.<sup>3</sup> A teacher with positive attitude and the one who can make the learning a fun and also can punctuate the discussions in the class by drafting humour, can certainly affect the academic success of the students rather affects the personality development of the students. A teacher is a pivot around whom the whole class and the class environment revolve; the students look up to the teacher as their role model. If the

teacher imbibes all the good qualities it becomes much easier for him to take the class along where as a teacher with negativity is most disliked teacher. A teacher is responsible to build the classroom environment which is most vital in developing healthy and cordial teacher taught relations. A teacher is a Character, an Actor, an Anchor, a Personality, a Role Model and above all a trustworthy Friend of the students.

Precisely, a teacher has the key role in building good relationship between the two and is a key factor in creating conducive class room environment. The core of the relationship lies in the ability of a teacher to connect with students. Good teachers are not just oiled machines; they are emotional, passionate being who connect with pleasure, creativity, challenge and joy (Hargreaves 1998). Another view stated that effective teachers appear to be those who are human in the fullest sense of the word ( McEwen 2002 ) On the other hand students desired healthy and rewarding relationship with their teachers with their peers (Doda & Knowles 2008, p27 )<sup>4</sup> The key to being a good teacher is to know the students.

Learning occurs in an environment that contains positive inter-personal relations and interactions and in which the learner feels appreciated, acknowledged respected and admired (Mc Combs and Whisler 1997).<sup>5</sup> The present paper has examined some pro active strategies to build the teacher – taught relations followed by the empirical research through which the opinion of the students has been drawn towards classroom environment by raising some posers.

### **BUILDING TEACHER - TAUGHT RELATION: PROACTIVE STRATEGIES**

The interpersonal relations between the teachers and the students can be built by using some effective strategies.

#### **CLASSROOM ENVIRONMENT**

One of the basic principles is creating a classroom environment, free from excessive competition, threat and ridicule. It is neither an environment dominated by an authoritarian teacher nor it is a wholly permissive environment, without any structure. It aims at creating an emotional climate for students to experience a sense or feeling of personal worth, trust, dignity and self-confidence, leading to self-discipline. The key to a supportive classroom environment is a teacher who is willing to establish a caring relationship with each student, learn about a student's individual needs and strengths, and provide the support and encouragement each student needs to be a successful learner.<sup>6</sup>

#### **FREEDOM FOR EXPRESSION**

Another practice that helps change children is freedom of expression. It involves allowing children to ask questions that help them relate to what they are learning in school and reconcile that to things happening outside; the trick lies in children answering in their own words, and from their own experiences, rather than simply memorizing and getting answers right in just one way. All these are small but important steps in helping children develop their understanding of the world they are in and examining their own prejudices and biases. Quite often, children have an idea arising from their everyday experiences with parents and friends or because of their exposure to the media, but they are not quite ready to express it in ways that a teacher might appreciate. A sensitive and informed teacher is aware that these experiences accumulated in school, at home or in the community, underlie biases and prejudices of various kinds. Broadening the range of such experiences to include exposure to a multi-cultural, multi-religious and multi-lingual environment reduces the scope for the

formation of prejudices. However, just the presence of a multi-cultural student population does not mean that it is a multi-cultural environment. Only when there are interactions and exchanges, and the involvement of each and every one that a multi-cultural environment is created, and is able to engage children through well-chosen tasks and questions, so that they are able to express their doubts, share views and question the assumptions underlying various beliefs, practices, rituals and social structures.

### **CONSTRUCTIVE FEEDBACK**

Providing feedback is a necessary part of teaching. Students may lose confidence in teachers who accept everything and do not encourage them to improve. Many a times, criticism implies that the person is not worthy. A gentle way of criticism is when a student is told that the idea is not worthy of the person's potential or ability. Constructive and meaningful feedback is important. Negative comments need to be avoided. Instead of saying, "You cannot do anything right," "You never use your head," we might say, "Can you think of another way of doing this?" Or "Let me show you another way."

### **POSITIVE REINFORCEMENT**

No strategy is considered more effective than positive reinforcement for desirable behaviour. Positive reinforcement where accomplishments (behavioural as well as academic) are appropriately recognised and self-esteem is strengthened is valuable. Whenever feasible, the teacher should try to find out ways to provide positive support. It could be recognition, leadership role, a word of appreciation, verbal approval, non-verbal approval or even awards. It is better if the reinforcement is descriptive and more focused on work rather than the personal.<sup>8</sup>

### **DESCRIPTIVE PRAISE**

Descriptive praise is the skill of describing a student's motivation and accomplishment and not his/her personality. A practice that some teachers adopt is to appreciate them for some quality of theirs, not necessarily in academics. Each child has one quality or the other, and we have to discover it. We need to recognise that all our students are smart and intelligent but in different ways, and accordingly, we need to discover and help our students discover where their passions and intelligence lie. Academic achievement is not the only marker for intelligence, and as teachers we need to be mindful of it and encourage various other skills that our students possess. It is not easy, but perseverance and constant mindfulness about such children will yield ways.<sup>9</sup>

### **ACCEPTING MISTAKES**

If students are made to understand that mistakes are a part of the work and that they are instructive, only then will they understand the value of mistakes, and will not try to hide mistakes or feel embarrassed about them. The teacher who focuses on creating an atmosphere in which it is safe to make mistakes is teaching the value of learning to make a choice, whether good or bad, and then, experiencing the consequences. By providing an emotionally safe terrain, teachers hold students accountable for their actions. It then helps in fostering responsibility for their actions rather than hiding the mistakes and putting up defenses to protect one's image.<sup>10</sup>

### **AVOIDING IMPULSIVE JUDGEMENTS AND EVALUATIVE REMARKS**

We are often in the habit of passing quick judgements. Instead of giving one's own judgements, we

can ask, “Do you like what you have done? What would you like to change to improve upon it?” Even in a situation where they have made a mistake, depending on the gravity of the situation, it may help to forgive. Against the usual perception that forgiveness leads to more carelessness, if a teacher helps build reflection by appropriate questioning about the student’s behaviour and forgives, it is much more helpful than punishment.

### **RESPECTING IDEAS AND QUESTIONS**

Criticism and making fun of children’s remarks can hinder them from expressing themselves. It is important that students express themselves because we cannot know what they are thinking and feeling unless we let them express themselves freely. However, after they have expressed, even if there is an error, it should not be immediately corrected. Rather, use of expressions like, “Is there a better answer?” or “Does someone think differently?” Why? is more useful.<sup>11</sup>

### **INCREASING INTRINSIC MOTIVATION**

Excessive competition is detrimental to peace and harmony. Inherent in competition is a set of values wherein success depends upon beating and defeating others. What is valued is triumph over others and being Number One. Competition teaches that self-worth depends on victories; winning is the goal, and not learning or practice, or development. Trying to beat people is extrinsic motivation. It is important to develop intrinsic motivation, that is, motivation to do something for its own sake, to learn to enjoy, to meet the challenge rather than to win a prize and defeat someone else. What is important is to reach one’s own standards for success. Intrinsic motivation flourishes when teachers provide encouragement, and appreciation for the efforts put in by the child and helps him/her to be successful.

The shift in attitude and mindset can transform the ambience in the classroom, overcoming the daily hassles and challenges posed by the ever-fluctuating demands on both students and teachers. This is not for sacrificing any serious goals of education rather it fulfills the holistic goals of education. Relationships strengthened by the teachers’ own skills and strategies of communication and listening, as empathetic and genuine mentors, and classroom practices that are caring, pave the way for real “teaching-learning.” Students can then learn and develop not as information banks but as informed human beings. Even teaching subjects and all other activities is to be viewed from this perspective.

Value contexts in teaching of subjects are the vital factor. The different subjects at school stage - Social Sciences, Science, Languages and Mathematics seek to provide knowledge, attitudes and values intrinsic to the particular discipline. In the very act or process of acquiring knowledge, however, which is not the same as memorization and reproduction of information, certain attitudes, values, habits of thinking that are concomitant to the pursuit of that particular knowledge get transmitted. For example, Science teaching aims at the development of understanding of the concepts, facts, principles, theories and laws that describe the physical and natural world. It is intended to strengthen the commitment to inquiry, curiosity, objectivity -scientific outlook open-mindedness, search for truth. Mathematics is associated with logical thinking, order, decision making, neatness, accuracy, perseverance. The Social Sciences at school stage intend to broaden children's vision of society as good citizens. History portrays the values of patriotism, compassion, bravery, co-operation, loyalty, justice, perseverance as evidenced from the lives of great people.

Geography communicates interdependence of countries, unity in diversity, environmental conservation. Language, besides encouraging communication and listening skills, is intended to inculcate imagination, creativity, sensitivity, appreciation and emotional development. It is for this reason that objectives of teaching different school subjects also include development of attitudes, appreciations, values, skills, which are appropriate to that subject. Every subject, considered from the stand point of value education is thus considered to be a repository of values. Good teaching of a subject implies teaching the subject in such a way that the students gain insight into the nature of the subject, its logical structure, methods and also imbibe the attitudes and values associated with that particular subject. Presenting the lesson from a humanistic and positive perspective is important. The lesson which would inspire awakens positive feelings, experiences and helps in understanding encourage, openness and spirit of inquiry in raising questions, exploring, discovering. By constructing their understanding of values and providing opportunity to put their knowledge of values into practice are meaningful. Strategies like questions, stories, anecdotes, games, experiments discussions, dialogues, value clarification, examples, analogies, metaphors, role play, simulation are helpful in promoting values during teaching-learning. Some values may be more adequately inculcated while teaching a particular subject at a particular stage or grade others may be more appropriately integrated with the other subjects at a particular grade. Thus subject - appropriate and stage/grade –appropriate strategies vis-a-vis values need to be delineated.<sup>12</sup>

### OBJECTIVE OF THE STUDY

The major objective of this paper is:

1. To assess and examine the Teacher-Taught Relations among secondary students of the Government schools in the back drop of pro active strategies.

### RESEARCH METHODOLOGY

For this study both primary and secondary data has been used.

**UNIVERSE:** The present paper attempts to investigate and examine the relationship between the students and the school teachers in the select District S.A.S. Nagar, Punjab. For the purpose of this study, 36 government schools imparting secondary education in the District (99), has been selected considering fair representation to each education block (8).

**SAMPLE:** A sample of 800 students, both Boys (400) and Girls (400) has been selected randomly from class 9<sup>th</sup> (380) and 10<sup>th</sup> (420) from all the 36 select schools.

### DISCUSSION AND ANALYSIS

The respondents were put across certain posers /statements to reach the findings. The data has been crossed tabulated and statistically tested on Chi Square Technique to find out the significant level (p-value)

**TABLE 1: YOU GET THE OPPORTUNITY TO GET GUIDANCE FROM YOUR TEACHER FOR YOUR LEARNING DIFFICULTIES**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value

Type of school	GHS	204	24	265	493	83.378	.000**
		41.4%	4.9%	53.8%	100.0%		
	GSSS	228	10	69	307		
		74.3%	3.3%	22.5%	100.0%		
Age	Below 16 years	365	28	281	674	.115	.944ns
		54.2%	4.2%	41.7%	100.0%		
	Above 16 years	67	6	53	126		
		53.2%	4.8%	42.1%	100.0%		
Gender	Boys	215	15	170	400	.588	.745ns
		53.8%	3.8%	42.5%	100.0%		
	Girls	217	19	164	400		
		54.2%	4.8%	41.0%	100.0%		
Total		432	34	334	800		
		54.0%	4.2%	41.8%	100.0%		

Source: Computed from Primary Data p-value $\leq 0.05$  is significant denote \*, p-value $\leq 0.01$  is significant denote \*\*, p-value $> 0.05$  is non-significant denote ns

The analysis of the responses projected in the Table 1, reflected statistically highly significant association between the type of school variable and the statement whereas non-significant association was seen between the other two variables and the statement. Further, it was found that more of respondents from the government senior secondary schools than the government high schools were convinced that they got the opportunity to get guidance from their teachers for their learning difficulties.

Overall analysis of the responses suggested that 54.0 per cent of the respondents **agreed** with the statement whereas striking proportion 41.8 percent of respondents **disagreed** with the statement indicating that some significant proportion of students denied having opportunity of getting guidance for their learning difficulties as they could not access the teachers easily.

Regardless of the any variable, it was found that majority of the respondents agreed that they got the opportunity to get guidance from their teachers to remove their learning difficulties.

**OBSERVATION:** The students generally did not approach their teachers for getting any of their learning difficulties solved. More often students discussed their problems between themselves. The teachers also expressed that students generally did not approach them for any of their learning difficulties whereas on the other hand the students shared that they, generally, did not approach the teachers however whenever they approached they were not encouraged by their teachers.



**TABLE 2: STUDENTS ENJOY FREEDOM OF EXPRESSION BY RAISING QUESTIONS  
IN THE CLASS**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value
Type of school	GHS	157	16	320	493	.215	.898ns
		31.8%	3.2%	64.9%	100.0%		
	GSSS	93	10	204	307		
		30.3%	3.3%	66.4%	100.0%		
Age	Below 16 years	201	24	449	674	4.880	.087ns
		29.8%	3.6%	66.6%	100.0%		
	Above 16 years	49	2	75	126		
		38.9%	1.6%	59.5%	100.0%		
Gender	Boys	135	13	252	400	2.363	.307ns
		33.8%	3.2%	63.0%	100.0%		
	Girls	115	13	272	400		
		28.8%	3.2%	68.0%	100.0%		
Total		250	26	524	800		
		31.2%	3.2%	65.5%	100.0%		

Source: Computed from Primary Data p-value $\leq 0.05$  is significant denote \*, p-value $\leq 0.01$  is significant denote \*\*, p-value $> 0.05$  is non-significant denote ns

On analysing the responses presented in the Table 2, it was found that statistically non-significant association was found between all the variables and the statement.

Overall analysis of the responses indicated that only 31.2 per cent of respondents agreed with the statement whereas 65.5 per cent of the respondents disagreed with the statement. The proportion of disagreed responses indicated that students were, possibly, not allowed to express themselves freely.

Irrespective of all the variables, it was found that majority of the respondents denied having freedom of expression in the class.

**OBSERVATION:** It was observed that in some of the schools the teachers were too strict to allow the students to raise or share ideas for maintaining class discipline. Generally, the students were found to be shy while expressing themselves.

**TABLE 3: TEACHERS TAKE THE ATTENDANCE OF THE CLASS DAILY**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value
Type of school	GHS	480	0	13	493	4.069	.131ns
		97.4%	.0%	2.6%	100.0%		
	GSSS	300	2	5	307		
		97.7%	.7%	1.6%	100.0%		
Age	Below 16 years	657	2	15	674	.386	.825ns
		97.5%	.3%	2.2%	100.0%		
	Above 16 years	123	0	3	126		
		97.6%	.0%	2.4%	100.0%		
Gender	Boys	384	2	14	400	7.740	.021*
		96.0%	.5%	3.5%	100.0%		
	Girls	396	0	4	400		
		99.0%	.0%	1.0%	100.0%		
Total		780	2	18	800		
		97.5%	.2%	2.2%	100.0%		

Source: Computed from Primary Data p-value $\leq 0.05$  is significant denote \*, p-value $\leq 0.01$  is significant denote \*\*, p-value $> 0.05$  is non-significant denote ns

The data projected in the Table 3 indicated that statistically significant association was found between the gender variable and the statement whereas non-significant association was found between the other variables and the statement. Further, it was noticed that more of students from 10<sup>th</sup> class than 9<sup>th</sup> class convincingly opined that the teachers did take the attendance of the class daily.

Overall responses revealed that 97.5 per cent of the respondents **agreed** with the statement whereas a very negligible proportion of respondents **disagreed** with the statement that some teachers were possibly casual in their approach.

Irrespective of the variables, it was found that highly significant proportion of the respondents agreed that the teachers did take the attendance of the class daily.

**OBSERVATION:** It was observed that teachers were very particular in making attendance and the practice was followed by all teachers except those days when the attendance registrar was called by the school office for the official purposes.

**TABLE 4: TEACHERS ARE PUNCTUAL IN COMING TO THE CLASS**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value
Type of school	GHS	466	4	23	493	1.469	.480ns
		94.5%	.8%	4.7%	100.0%		
	GSSS	285	5	17	307		
		92.8%	1.6%	5.5%	100.0%		
Age	Below 16 years	635	7	32	674	.881	.644ns
		94.2%	1.0%	4.7%	100.0%		
	Above 16 years	116	2	8	126		
		92.1%	1.6%	6.3%	100.0%		
Gender	Boys	376	6	18	400	1.401	.496ns
		94.0%	1.5%	4.5%	100.0%		
	Girls	375	3	22	400		
		93.8%	.8%	5.5%	100.0%		
Total		751	9	40	800		
		93.9%	1.1%	5.0%	100.0%		

Source: Computed from Primary Data p-value $\leq$ 0.05 is significant denote \*, p-value $\leq$ 0.01 is significant denote \*\*, p-value $>$ .05 is non- significant denote ns

The data presented in the Table 4 indicated that statistically non-significant association was found between the variables and the statement.

Overall responses revealed that 93.9 per cent of the respondents agreed with the statement whereas a very negligible proportion of 5.0 percent of respondents disagreed with the statement indicating that at times some of the teachers were assigned some clerical or official work which delayed their coming to the class.

Irrespective of the variables, it was found that highly significant proportion of the respondents agreed that teachers were punctual in coming to the class.

**OBSERVATION:** It was observed that the teachers entered the class soon after the change of period was sounded except the time the teacher was summoned by the Principal for some official purpose.

**TABLE 5: TEACHERS MOTIVATES THE STUDENTS REGULARLY TO GET BEST OUT OF THEM**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value
Type of school	GHS	287	11	195	493	14.743	.001**
		58.2%	2.2%	39.6%	100.0%		
	GSSS	188	22	97	307		
		61.2%	7.2%	31.6%	100.0%		
Age	Below 16 years	389	31	254	674	5.968	.051ns
		57.7%	4.6%	37.7%	100.0%		
	Above 16 years	86	2	38	126		
		68.3%	1.6%	30.2%	100.0%		
Gender	Boys	227	18	155	400	2.311	.315ns
		56.8%	4.5%	38.8%	100.0%		
	Girls	248	15	137	400		
		62.0%	3.8%	34.2%	100.0%		
Total		475	33	292	800		
		59.4%	4.1%	36.5%	100.0%		

Source: Computed from Primary Data p-value $\leq$ 0.05 is significant denote \*, p-value $\leq$ 0.01 is significant denote \*\*, p-value $>$ .05 is non-significant denote ns

On analyzing the responses presented in the Table 5, it was found that statistically highly significant association was found between the type of school variable and the statement whereas non-significant association was found in case of other variables such as age, gender and the statement. Further, it was noticed that more of students from government senior secondary schools than government high schools strongly viewed that teachers motivated the students regularly.

Overall responses revealed that 59.4 per cent of the respondents agreed with the statement whereas noticeable proportion of 36.5 percent of respondents disagreed with the statement indicating that teachers did not motivate the students regularly for the reason that in some of the schools the

teachers had casual approach towards the students.

Irrespective of the variables, it was found that majority of the respondents agreed that that teachers motivated the students regularly.

**OBSERVATION:** It was observed by the researcher during the visit that in some of the schools the teachers were more particular in motivating the students than other schools. The intensity of motivation varied from teacher to teacher and school to school.

**TABLE 6: STUDENTS ARE GIVEN CONSTRUCTIVE FEEDBACK BY THE TEACHERS**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value
Type of school	GHS	489	1	3	493	.930	.628ns
		99.2%	.2%	.6%	100.0%		
	GSSS	306	0	1	307		
		99.7%	.0%	.3%	100.0%		
Age	Below 16 years	670	1	3	674	.445	.800ns
		99.4%	.1%	.4%	100.0%		
	Above 16 years	125	0	1	126		
		99.2%	.0%	.8%	100.0%		
Gender	Boys	398	1	1	400	2.001	.368ns
		99.5%	.2%	.2%	100.0%		
	Girls	397	0	3	400		
		99.2%	.0%	.8%	100.0%		
Total		795	1	4	800		
		99.4%	.1%	.5%	100.0%		

Source: Computed from Primary Data p-value $\leq$ 0.05 is significant denote \*, p-value $\leq$ 0.01 is significant denote \*\*, p-value $>$ .05 is non-significant denote ns

On analysing the responses of the data presented in the Table 6, it was found that statistically non-significant association was found between the all variables and the statement.

Overall responses reflected that 99.4 per cent of the respondents agreed with the statement whereas a very negligible proportion of 0.5 percent of respondents disagreed with the statement that they were given constructive feed back by their teachers.

Regardless of any variable, it was found that highly significant proportion of the respondents agreed

with the statement that they were given constructive feed back by their teachers.

**OBSERVATION:** The students expressed in confidence that their teachers were good enough to provide them constructive feedback to make improvements in their academics.

**TABLE 7: TEACHERS RESPECT & RECOGNIZE IDEAS PUT FORTH BY THE STUDENTS**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value
Type of school	GHS	473	3	17	493	5.172	.075ns
		95.9%	.6%	3.4%	100.0%		
	GSSS	283	4	20	307		
		92.2%	1.3%	6.5%	100.0%		
Age	Below 16 years	637	5	32	674	1.007	.604ns
		94.5%	.7%	4.7%	100.0%		
	Above 16 years	119	2	5	126		
		94.4%	1.6%	4.0%	100.0%		
Gender	Boys	372	7	21	400	7.866	.020*
		93.0%	1.8%	5.2%	100.0%		
	Girls	384	0	16	400		
		96.0%	.0%	4.0%	100.0%		
Total		756	7	37	800		
		94.5%	.9%	4.6%	100.0%		

Source: Computed from Primary Data p-value $\leq$ 0.05 is significant denote \*, p-value $\leq$ 0.01 is significant denote \*\*, p-value $>$ .05 is non-significant denote ns

On analyzing the responses the projected in the Table 7, it was found that statistically significant association was found between the gender variable and the statement. However, non-significant association was found between the other variables and the statement. Further, it was noticed that more of girl students than boy students were more convinced that their teachers respected & recognized ideas put forth by the students.

Overall responses revealed that 94.5 per cent of the respondents agreed with the statement whereas negligible proportion of 4.6 percent of respondents disagreed with the statement.

Regardless of any variable, it was found that highly significant proportion of the respondents agreed that their teachers respected & recognized ideas put forth by the students.

**OBSERVATION:** The observation of the researcher while interacting with the students reflected that most of the times students were shy to put forth some ideas, then some of the teachers were too strict and students were too scared to share the ideas but definitely once the ideas were floated those were respected and recognized by the concerned teacher.

**TABLE 8: TEACHERS, BESIDES TEACHING, TRY TO INCULCATE VALUES AMONG THE STUDENTS**

Variables	Groups	Agree	Undecided	Disagree	Total	Pearson Chi Square	p-value
Type of school	GHS	111	11	371	493	12.759	.002**
		22.5%	2.2%	75.3%	100.0%		
	GSSS	97	14	196	307		
		31.6%	4.6%	63.8%	100.0%		
,Age	Below 16 years	166	17	491	674	10.420	.005**
		24.6%	2.5%	72.8%	100.0%		
	Above 16 years	42	8	76	126		
		33.3%	6.3%	60.3%	100.0%		
Gender	Boys	114	10	276	400	3.320	.190ns
		28.5%	2.5%	69.0%	100.0%		
	Girls	94	15	291	400		
		23.5%	3.8%	72.8%	100.0%		
Total		208	25	567	800		
		26.0%	3.1%	70.9%	100.0%		

Source: Computed from Primary Data p-value $\leq$ 0.05 is significant denote \*, p-value $\leq$ 0.01 is significant denote \*\*, p-value $>$ .05 is non-significant denote ns

On analysing the responses the presented in the Table 8, it was found that statistically highly significant association was found between the type of school, age variables and the statement whereas non-significant association was found between the other variables and the statement. Further, it was noticed that more of students from government high schools than government senior secondary schools strongly viewed that teachers did not try to inculcate values among the students besides teaching them.



Overall responses revealed that noticeable proportion of 26.0 per cent of the respondents agreed with the statement whereas 70.9 percent of respondents disagreed with the statement for the possible reason that teachers were stereo typed in their teaching style hence taught to the point without caring for the value inculcation

Irrespective of the variables, it was found that high proportion of the respondents expressed that teachers did not try to inculcate values among the students.

**OBSERVATION:** It was observed that teachers were hardly getting time to finish the syllabus thus were not trying to share moral stories with them in the class. The effort to inculcate values was teacher specific.

### **FINDINGS**

1. Majority of respondents agreed that they got the opportunity to get guidance from their teachers to remove their learning difficulties.
2. Majority of respondents disagreed that majority of the respondents denied having freedom of expression in the class.
3. Highly significant proportion of the respondents supported the statement that the teachers did take the attendance of the class daily.
4. Highly significant proportion of the respondents favoured the statement that teachers were punctual in coming to the class.
5. Majority of the respondents were in agreement that teachers motivated the students regularly.
6. Highly significant proportion of the respondents agreed with the statement that they were given constructive feed back by their teachers.
7. Highly significant proportion of the respondents favoured the statement that their teachers respected & recognized ideas put forth by the students.
8. High proportion of the respondents expressed that teachers did not try to inculcate values among the students

### **SUMMARY**

The study explored that majority of the students got the opportunity to get guidance for their learning difficulties. Further, they opined that their teachers were punctual in coming to the class and they took the class attendance daily. Moreover, most of the students expressed that their teachers motivated them and gave them constructive feedback. They also overwhelmingly expressed that their teachers respected & recognized ideas put forth by the students but opined that teachers did not inculcate values among them during the course of lecture.

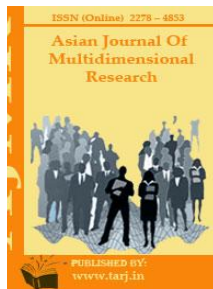
### **SUGGESTIONS**

The shyness of the students can be taken off by interactive sessions where the discussions are allowed among the students and with their teachers. The activities like declamation contests, class discussions, quiz sessions and debates on the current issues will certainly help to open up the students. The teachers should share the moral stories with students and punctuate their lectures with value laden examples. The teachers as the leaders should lead from the front & should live with high

moral values. The students are the budding citizens who follow their teachers after their parents; therefore, teachers should exhibit high moral standards at their work place and in their life as well.

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## NUMERICAL METHOD FOR DIFFUSION EQUATIONS

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### ABSTRACT

*In this paper, we use the fractional variational iteration method (FVIM) to solve a time-fractional multi-dimensional diffusion equation, which describes density dynamics in a material undergoing diffusion. By using this method, a rapid convergent sequence tending to the exact solution of the equation can be obtained. Some numerical examples are presented to show the efficiency of the considered method.*

**KEYWORDS:** *Variational Iteration Method; Fractional multi-dimensional diffusion equations; He's polynomials.*

### 1. INTRODUCTION

The fractional calculus has a tremendous use in basic sciences and engineering. Oldham and Spanier [1] have played a key role in the development of the subject. Several fundamental work for solving fractional differential equation have been done by Miller and Rose [2], Podlubny [3], Diethelm and Ford [4], Diethelm [5] etc. Variational iteration method is a powerful tool by which we can obtain exact and analytic solution for nonlinear partial differential equations. The Variational iteration method was first proposed by He [6-10] and was successfully applied to solve nonlinear systems of PDE's and nonlinear differential equations of fractional order by Shawagfeh [11], Diethelm and Ford [12], Momani and Odibat [13] etc. easily. The diffusion equation is a partial differential equation which describes density dynamics in a material under going diffusion. It is used to describe processes exhibiting diffusive - like behavior, for instance the 'diffusion' of alleles in population genetics. We consider the following fractional multi-dimensional diffusion equation for this article  $\frac{\partial^\alpha u(r,t)}{\partial t^\alpha} = \nabla \cdot (D(u(r,t), r))$ ,  $u(r, 0) = g(r)$ ,  $0 < \alpha \leq 1$ , where  $u(r, t)$  is the density of the diffusing material at  $r = (x, y, z)$  and time  $t$ .  $(D(u(r,t), r))$  denotes the collective diffusion coefficient for density  $u$  at location  $r$ . Several techniques including the numerical method by Siddique (2010) [14], Variational iteration method and Homotopy perturbation method

by Akbarzade and Langari (2011) [15], Modified Homotopy perturbation method by Devender Kumar [23] have been used for solving the set of problems and references therein.

In recent years, fractional differential equations have gained importance and popularity, mainly due to their demonstrated application in science and engineering. For example, these equations are increasingly used to model problems in research areas as diverse as dynamical systems, mechanical systems, control, chaos, chaos synchronization, continuous-time random walks, anomalous diffusive and sub diffusive systems, unification of diffusion and wave propagation phenomenon and others.

In this paper, we apply Variational iteration method for solving fractional multi-dimensional diffusion equations and find analytical approximate solution of a multi-dimensional fractional diffusion equation. By using an initial value, the explicit solutions of the equation for different examples have been derived, which accelerate the rapid convergence of the sequence solution. Numerical results for different particular examples are presented graphically. This paper is divided into five parts as follows: section (1) is introductory, in section (2), some basic definition of fractional calculus are given, in section (3) introduction about Variational iteration method is given, in section (4) we apply Variational iteration method to find the value of Lagrangian multiplier for general fractional multi-dimensional diffusion equation, in section (5) some numerical examples are presented and finally in section (6) conclusions are drawn.

## 2. BASIC DEFINITIONS OF FRACTIONAL CALCULUS

In this section, we mention the following basic definitions of fractional calculus.

**Definition 1.** A real function  $f(t)$ ,  $t > 0$  is said to be in the space  $C_\alpha$ ,  $\alpha \in \mathbb{R}$  if there exists a real number  $p(> \alpha)$ , such that  $f(t) = t^p f_1(t)$  where  $f_1 \in C[0, \infty]$  clearly  $C_\alpha \subset C_\beta$  if  $\beta \leq \alpha$ .

**Definition 2.** A function  $f(t)$ ,  $t > 0$  is said to be in the space  $C_\alpha^m$ ,  $m \in \mathbb{N} \cup \{0\}$  if  $f^{(m)} \in C_\alpha$ .

**Definition 3.** The left sided Riemann-Liouville fractional integral of order  $\mu > 0$ , [16, 17, 18] of a function  $f \in C_\alpha$ ,  $\alpha \geq -1$  is defined as:

**Definition 4.** The (left sided) Caputo fractional derivative of  $f$ ,  $f \in C_{-1}^m$ ,  $m \in \mathbb{N} \cup \{0\}$  is defined as [19]:

$$D_t^\mu f(t) = \begin{cases} I^{m-\mu} f^{(m)}(t), & m-1 < \mu < m, m \in \mathbb{N}, \\ \frac{d^m}{dt^m} f(t), & \mu = m \end{cases}$$

Note that

$$a. I_t^\alpha f(x, t) = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(x, s) ds, \alpha > 0, t > 0$$

$$b. D_t^\alpha u(x, t) = I_t^{m-\alpha} \frac{\partial^m u(x, t)}{\partial t^m}, m-1 < \alpha < m.$$

$$c. I_t^\mu t^\gamma = \frac{\Gamma(\gamma+1)}{\Gamma(\mu+\gamma+1)} t^{\mu+\gamma}.$$

**Definition 5.** The Mittag-Leffler function  $E_\alpha(z)$  with  $\alpha > 0$  is defined by the following series representation, valid in the whole complex plane [20-22]:

$$E_{\alpha}(z) = \sum_{n=0}^{\infty} \frac{z^n}{\Gamma(\alpha n + 1)}, \alpha > 0, z \in \mathbb{C}$$

### 3. FRACTIONAL VARIATIONAL ITERATION METHOD

To describe the solution procedure of the fractional variational iteration method, we consider the following fractional differential equation

$$\frac{\partial^{\alpha} u}{\partial t^{\alpha}} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2}, (0 < \alpha \leq 1),$$

According to the FVIM, we can build a correct functional for this equation as follows

$$u_{n+1}(x, t) = u_n + \frac{1}{\Gamma(1 + \alpha)} \int_0^t \lambda \left( \frac{\partial^{\alpha} u_n}{\partial \tau^{\alpha}} - \frac{\partial^2 \tilde{u}_n}{\partial x^2} - \frac{\partial^2 \tilde{u}_n}{\partial y^2} - \frac{\partial^2 \tilde{u}_n}{\partial z^2} \right) (d\tau)^{\alpha}$$

Now by the variational theory  $\lambda$  must satisfy

$\frac{\partial^{\alpha} \lambda_1}{\partial \tau^{\alpha}} = 0$  and  $1 + \lambda|_{\tau=t} = 0$ . From these equations, we obtain  $\lambda = -1$  and a new correction functional

$$u_{n+1}(x, t) = u_n - \frac{1}{\Gamma(1 + \alpha)} \int_0^t \left( \frac{\partial^{\alpha} u_n}{\partial \tau^{\alpha}} - \frac{\partial^2 u_n}{\partial x^2} - \frac{\partial^2 u_n}{\partial y^2} - \frac{\partial^2 u_n}{\partial z^2} \right) (d\tau)^{\alpha},$$

It is obvious that the sequential approximations  $u_n, n \geq 0$  can be established by determining  $\lambda$ , a general Lagrange's multiplier, which can be identified optimally with the variational theory. The function  $\tilde{u}_n$  is a restricted variation which means  $\delta \tilde{u}_n = 0$ . Therefore, we first designate the Lagrange multiplier  $\lambda$  that will be identified optimally via integration by parts. The successive approximations  $u_{n+1}(x, t), n \geq 0$  of the solution the exact solution may be procured by using  $u(x, t) = \lim_{n \rightarrow \infty} u_n(x, t)$

### 4. COMPUTATIONAL WORK FOR FRACTIONAL MULTI -DIMENSIONAL DIFFUSION EQUATION

In this section, we apply the fractional variational iteration method for solving for fractional multi - dimensional diffusion equation.

Example 4.1. Consider the following two-dimensional fractional diffusion equation

$$\frac{\partial^{\alpha} u}{\partial t^{\alpha}} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2}, 0 \leq x \leq 1, 0 \leq y \leq 1, t > 0, 0 < \alpha \leq 1 \text{ with initial condition}$$

$$u(x, y, 0) = (1 - y)e^x.$$

Now applying Variational iteration method and using (2), we get

$$u_0 = u(x, y, 0) = (1 - y)e^x.$$

So by FVIM using (2), we get

$$u_1 = (1-y)e^x + \frac{1}{\Gamma(1+\alpha)}(1-y)e^x t^\alpha.$$

$$u_2 = (1-y)e^x \left( 1 + \frac{1}{\Gamma(1+\alpha)}t^\alpha + \frac{1}{\Gamma(1+2\alpha)}t^{2\alpha} \right).$$

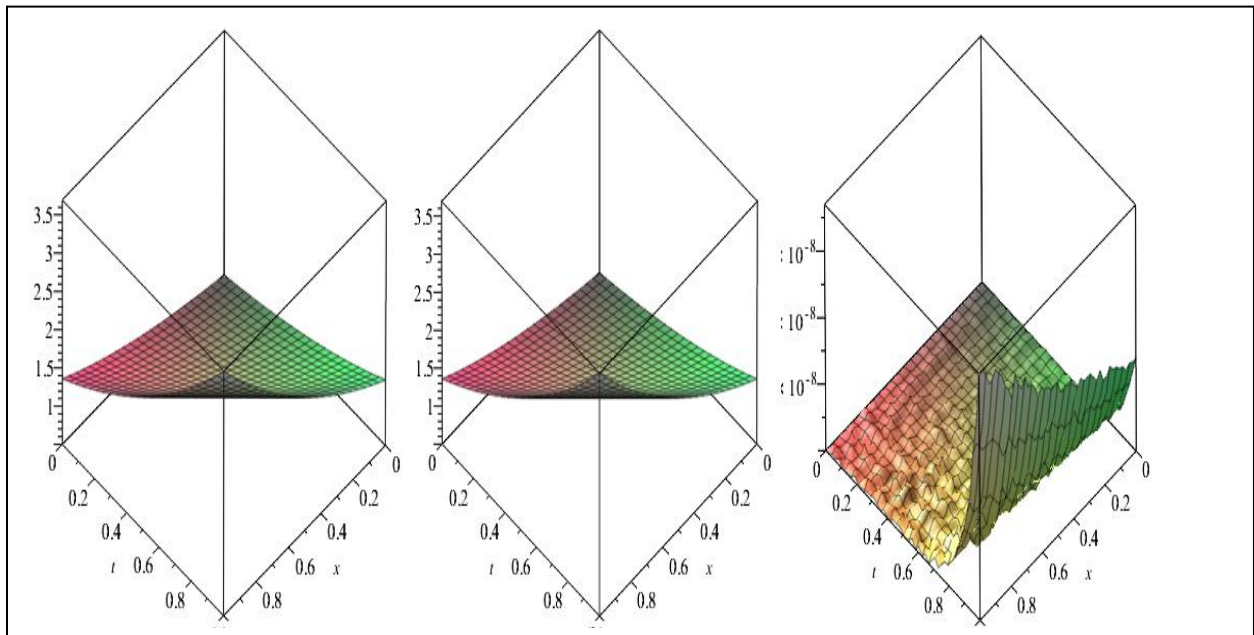
$$u_3 = (1-y)e^x \left( 1 + \frac{1}{\Gamma(1+\alpha)}t^\alpha + \frac{1}{\Gamma(1+2\alpha)}t^{2\alpha} + \frac{1}{\Gamma(1+3\alpha)}t^{3\alpha} \right).$$

$$u_n = (1-y)e^x \left( 1 + \frac{1}{\Gamma(1+\alpha)}t^\alpha + \frac{1}{\Gamma(1+2\alpha)}t^{2\alpha} + \frac{1}{\Gamma(1+3\alpha)}t^{3\alpha} + \dots + \frac{1}{\Gamma(1+n\alpha)}t^{n\alpha} \right).$$

So as  $n$  tends  $\infty$

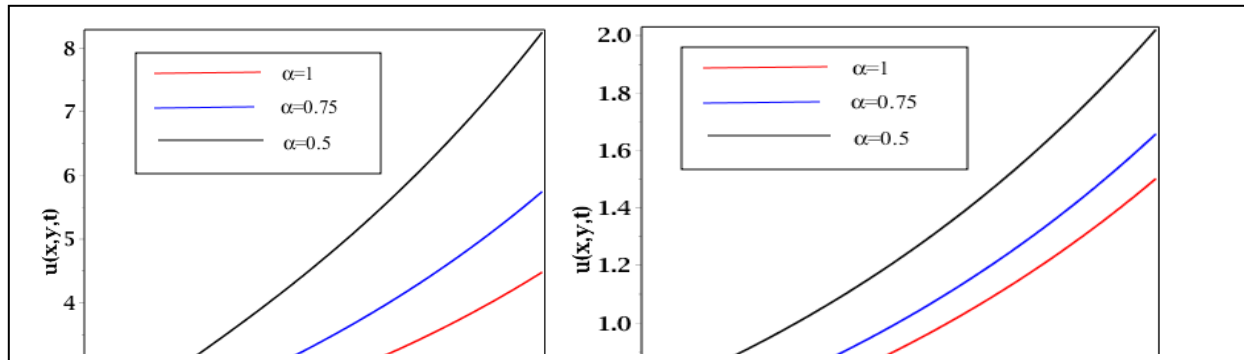
$u(x, t) = \lim_{n \rightarrow \infty} u_n(x, t) = (1-y)e^x E_\alpha(t^\alpha)$ , Where  $E_\alpha(t^\alpha)$  is Mittag-Lefflerfunction.

**FIG.1.COMPARISON BETWEEN EXACT AND APPROXIMATE SOLUTION**



**FIG.2. TENTH ORDER OF APPROXIMATE SOLUTIONS FOR DIFFERENT VALUES OF  $\alpha$  at  $x = 0, y = 0.5$  (a) and  $t = 0.1, y = 0.5$  (b)**

Fig.1. shows the comparison between approximate solution and exact solution for  $\gamma = 0.5$  when



$\alpha = 1$  obtained by Variational iteration method. It can be observed from figure 1 that the solution obtained by VIM is same as exact solution. It is to be noted that only the tenth order term of VIM was used in evaluating the approximate solution.

Example 4.2. Consider the following two-dimensional fractional diffusion equation

$$\frac{\partial^\alpha u}{\partial t^\alpha} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2}, \quad 0 \leq x \leq 1, 0 \leq y \leq 1, t > 0, 0 < \alpha \leq 1, \text{ with initial condition}$$

$$u(x, y, 0) = e^{x+y}.$$

So applying Variational iteration method and using (2), we get

$$u_1 = e^{x+y} + \frac{1}{\Gamma(1+\alpha)} e^{x+y} 2t^\alpha.$$

$$u_2 = e^{x+y} \left( 1 + \frac{2t^\alpha}{\Gamma(1+\alpha)} + \frac{(2t^\alpha)^2}{\Gamma(1+2\alpha)} \right).$$

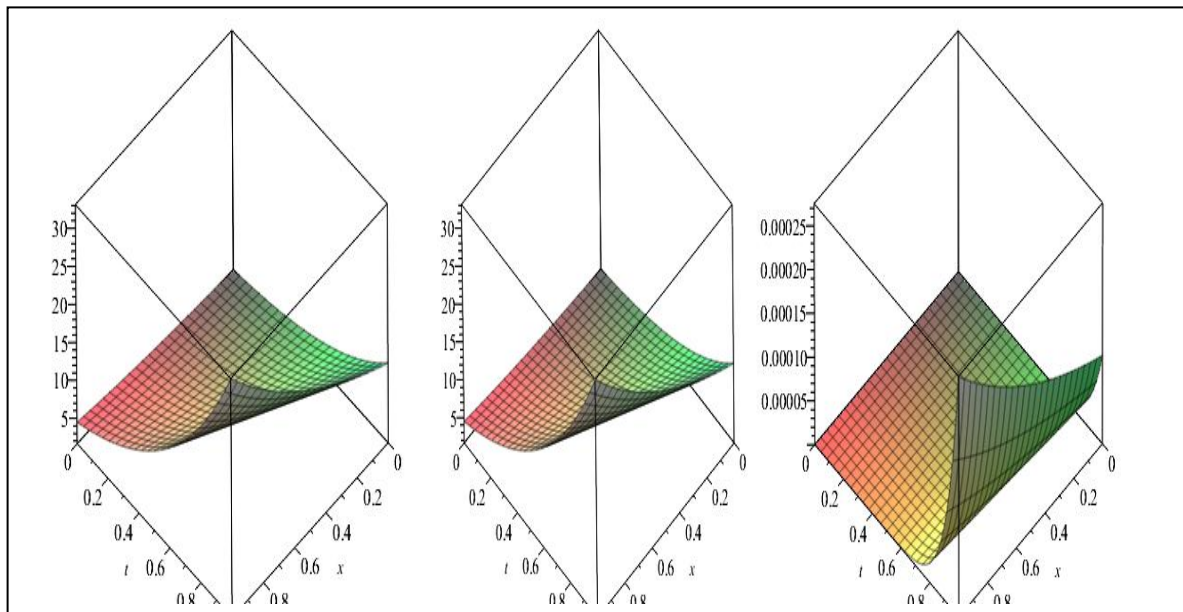
$$u_3 = e^{x+y} \left( 1 + \frac{2t^\alpha}{\Gamma(1+\alpha)} + \frac{(2t^\alpha)^2}{\Gamma(1+2\alpha)} + \frac{(2t^\alpha)^3}{\Gamma(1+3\alpha)} \right).$$

$$u_n = e^{x+y} \left( 1 + \frac{2t^\alpha}{\Gamma(1+\alpha)} + \frac{(2t^\alpha)^2}{\Gamma(1+2\alpha)} + \frac{(2t^\alpha)^3}{\Gamma(1+3\alpha)} + \dots + \frac{(2t^\alpha)^n}{\Gamma(1+n\alpha)} \right).$$

So as  $n$  tends  $\infty$

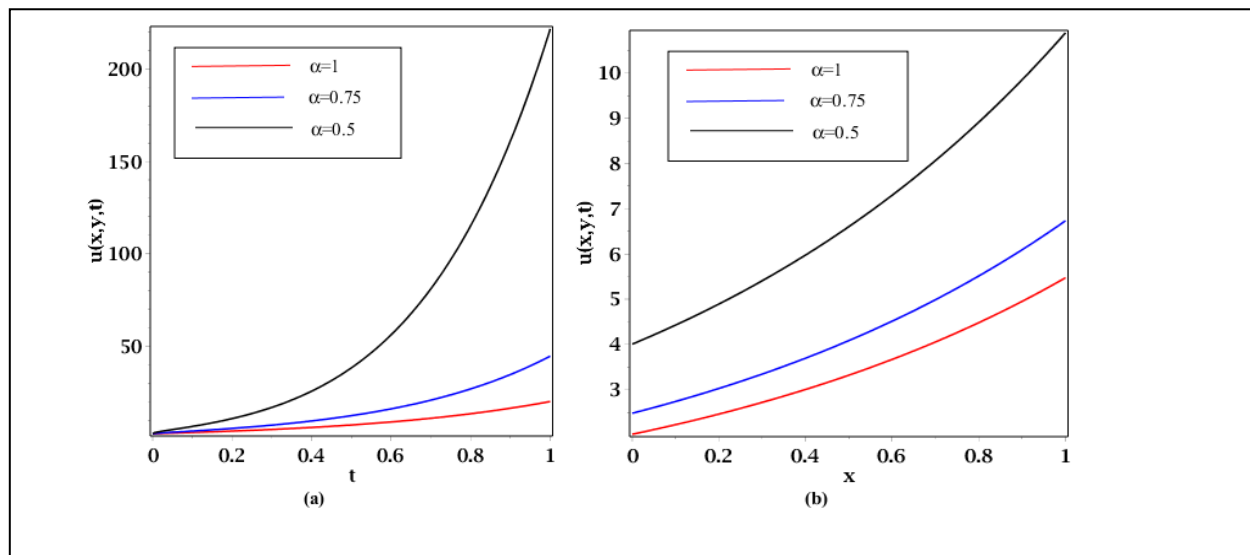
$$u(x, t) = \lim_{n \rightarrow \infty} u_n(x, t) = e^{x+y} E_\alpha(2t^\alpha), \text{ where } E_\alpha(2t^\alpha) \text{ is Mittag-Leffler function.}$$





**OXIMATE SOLUTION**

Fig.3. shows the comparison between approximate solution and exact solution for  $y = 0.5$  when  $\alpha = 1$  obtained by Variational iteration method. It can be observed from figure 1 that the solution



obtained by VIM is same as exact solution. It is to be noted that only the tenth order term of VIM was used in evaluating the approximate solution.

**FIG.4. TENTH ORDER OF APPROXIMATE SOLUTIONS FOR DIFFERENT VALUES OF  $\alpha$  at  $x = 0.5, y = 0.5$  (a) and  $t = 0.5, y = 0.1$  (b)**

Example 4.3. Consider the following three-dimensional fractional diffusion equation

$$\frac{\partial^\alpha u}{\partial t^\alpha} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2}, \quad 0 \leq x \leq 1, 0 \leq y \leq 1, 0 \leq z \leq 1, t > 0, 0 < \alpha \leq 1, \text{ with initial condition}$$

$$u(x, y, z, 0) = (1 - y)e^{x+z}.$$

So initially we can take

$$u_0 = u(x, y, z, 0) = (1 - y)e^{x+z}.$$

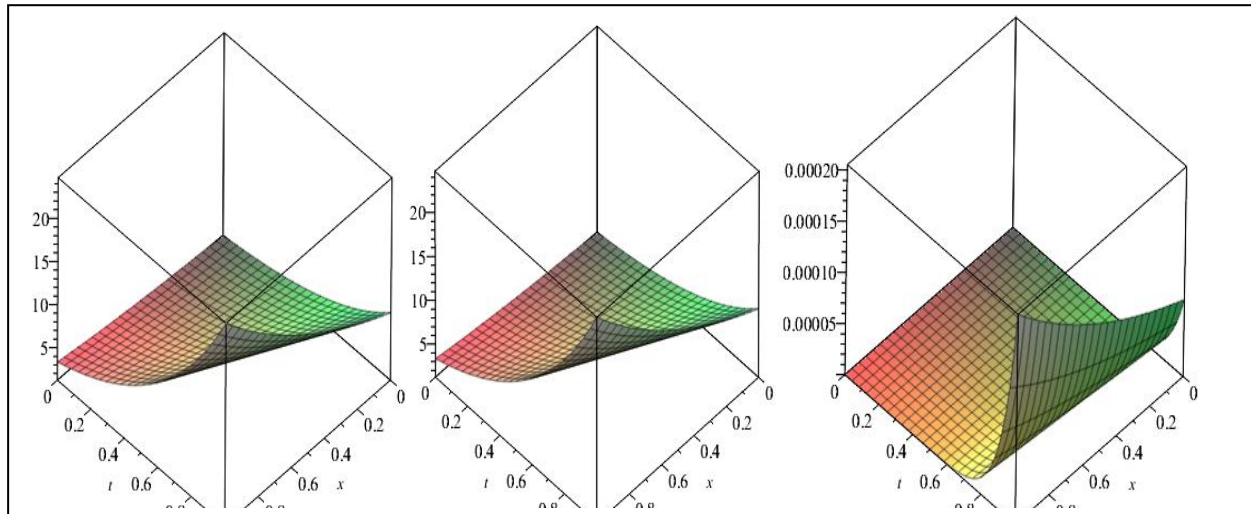
Now applying Variational iteration method and using (2), we get

$$u_1 = (1 - y)e^{x+z} + \frac{1}{\Gamma(1+\alpha)}(1 - y)e^{x+z} 2t^\alpha.$$

$$u_2 = (1 - y)e^{x+z} \left( 1 + \frac{(2t^\alpha)}{\Gamma(1+\alpha)} + \frac{(2t^\alpha)^2}{\Gamma(1+2\alpha)} \right).$$

$$u_3 = (1 - y)e^{x+z} \left( 1 + \frac{(2t^\alpha)}{\Gamma(1+\alpha)} + \frac{(2t^\alpha)^2}{\Gamma(1+2\alpha)} + \frac{(2t^\alpha)^3}{\Gamma(1+3\alpha)} \right).$$

$$u_n = (1 - y)e^{x+z} \left( 1 + \frac{(2t^\alpha)}{\Gamma(1+\alpha)} + \frac{(2t^\alpha)^2}{\Gamma(1+2\alpha)} + \frac{(2t^\alpha)^3}{\Gamma(1+3\alpha)} + \dots + \frac{(2t^\alpha)^n}{\Gamma(1+n\alpha)} \right).$$



So as  $n$  tends  $\infty$

**FIG. 5.COMPARISON BETWEEN EXACT AND APPROXIMATE SOLUTION**

$u(x, t) = \lim_{n \rightarrow \infty} u_n(x, t) = (1 - y) e^{x+z} E_\alpha(2 t^\alpha)$ . Where  $E_\alpha(2 t^\alpha)$  is Mittag-Lefflerfunction.

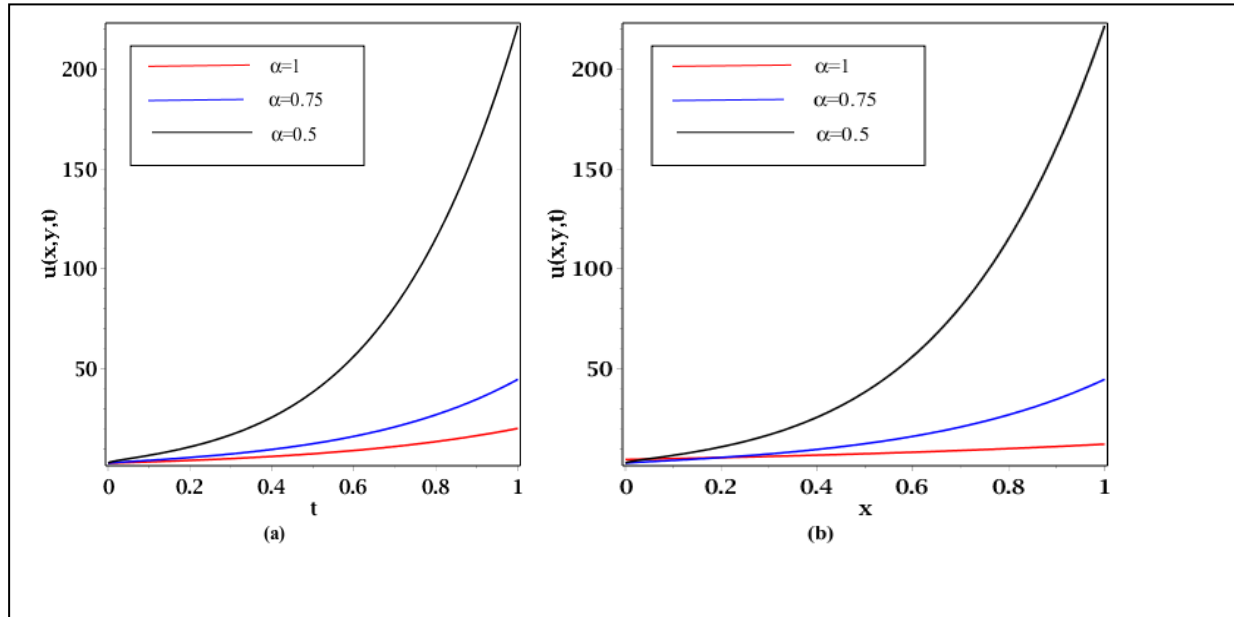


Fig. 3.shows the comparison between approximate solution and exact solution for  $y = 0.5, z = 0.9$  when  $\alpha = 1$  obtained by Variational iteration method. It can be observed from figure 1 that the solution obtained by VIM is same as exact solution. It is to be noted that only the tenth order term of VIM was used in evaluating the approximate solution.

**FIG.6. TENTH ORDER OF APPROXIMATE SOLUTIONS FOR DIFFERENT VALUES OF  $\alpha$  at  $x = 0.5, y = 0.5, z = 0.5$  (a) and  $t = 0.5, y = 0.5, z = 0.5$  (b)**

## 6. CONCLUSION

In this paper, fractional variational iteration method (FVIM) is considered for solving time fractional multi-dimensional diffusion equation. We apply application of this method in examples 4.1-4.3 for two and three dimension. Numerical results shows that VIM is a powerful and reliable algorithm for finding the approximate solution of the time-fractional multi-dimensional diffusion equation. There are some important points to make here, when we use VIM only initial condition is used and boundary condition can be used to justify the obtained result. Sequence of approximated solution converge to exact solution rapidly. It converges more rapidly for the values of  $\alpha$  which are near to 1. But its convergence is slow for the values of  $\alpha$  which are very near to 0.

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## A CRITICAL STUDY OF HIGHER EDUCATION IN HIMACHAL PRADESH

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### ABSTRACT

*Higher education institutions situated at Himachal Pradesh are operating under adverse conditions like overcrowding, lack of infrastructural facilities, financial cuts, lack of autonomy, absence of professional management and stakeholders support. No attempt is made for developing competitiveness, strategic alliances, human resource capacity, international cooperation, cultural awareness and education exports. Though stakeholders understand that benefits of GATS include academic qualitative improvement, strengthening of research, innovation in curriculum, diversity of programs and revenue generation, it is feared may lead to commercialization, brain drain and loss of cultural identity. The paper study statistics collected through secondary Governmental sources.*

**KEYWORDS:** *Higher Education in Himachal Pradesh, Enrolment, District-wise study, quality in Higher Education*

### INTRODUCTION

The diversity in education system in Himachal Pradesh is quite visible due to the differences in educational system of the conglomerating units regions/principalities. Some of the integrating States were ahead while others were quite backward, some had practically no educational institutions, while others were so small that economically they could not afford to maintain educational institutions in their territories. Such principalities depended for education on the infrastructure developed in the neighboring States. All these problems posed a great challenge to the educational administration to bring all to a common level and reach a take off stage from where a uniform education system could be launched.

At the time of formation of Himachal Pradesh in 1948, the integrating States had no institution of higher education except that there was a pre-University College at Mandi which was established in 1948. In the year 1954, Bilaspur was integrated with Himachal resulting into increase in number of Degree Colleges to two. The Bilaspur College was established in July 1952. In the year 1958, Chamba College was established. In 1959, Rampur Bashabir and Solan Colleges were established,

raising the number of degree colleges to five in 1959-60. In 1963, degree college at Nahan was established raising the number of colleges to six. On Nov.1, 1966, Punjab hill areas was merged with Himachal Pradesh and the area being educationally developed inherited seven degree colleges i.e. Govt. Degree College, Dharmsala (1926), Govt. Degree College, Hamirpur (1965), Kanya Mahavidyalaya, Shimla (1945), Himachal Pradesh Evening College, Shimla (taken over later by Govt. 1962, St. Bedes College, Shimla, (1904) and College of Education, Dharmsala/Shimla (1950). In 1969, Govt. Degree College Santali was established.

### GROWTH OF HIGHER EDUCATIONAL INSTITUTIONS PRIOR TO 1991

It is observed that during 1966-67 to 1985-86, while colleges increased by 2.5 times (from 14 to 34), the enrolment increased by 6.75 times (from 4105 to 27,878) and teachers increased by 2.75 times (from 311 to 853). The enrolment in Colleges has, however, come down from the year 1990-91 to 25973 while teachers and degree colleges increased to 1249 and 44 respectively for the simple reason that from the year 1986-87, Himachal Pradesh switched over to 10+2+3 system of education with the result that more than 100 schools were converted/upgraded to Sr. Sec. Level. This provided educational facilities to the children nearer to their homes compared to the colleges which were located at almost urban areas. As more and more children joined these Senior/Secondary Schools for education up to the level of 10+2, it resulted in the reduction of enrolment in 10+2 attached to Degree Colleges.

The expansion of Higher Education in Himachal Pradesh is depicted in table 4.18 given below:

TABLE- 1						
Growth of Higher Educational Institutions Prior to 1991						
Years	No. of Colleges		Enrolment		Teacher	
	Govt.	Non-Govt.	Male	Female	Male	Female
1949-50	1	—	155	2	12	—
1954-55	2	—	365	38	33	—
1955-56	3	—	445	51	38	—
1959-60	5	—	552	176	79	7
1963-64	6	—	931	257	116	14
1966-67	12	2	3230	875	276	35
1971-72	14	5	11124	2580	400	88
1974-75	16	8	11076	2965	458	123
1982-83	16	11	15931	4857	594	161
1983-84	16	11	18716	5271	597	172
1984-85	21	11	20951	6003	651	182
1985-86	22	12	21205	6673	654	199
1986-87	25	12	19114	7231	683	202
1987-88	25	13	17033	6880	739	240
1988-89	25	14	13009	5165	760	258
1989-90	25	15	15834	7045	—	—
1990-91	26	18	17620	8353	736	513

### GROWTH OF HIGHER EDUCATIONAL INSTITUTIONS AFTER 1991



<b>TABLE -2</b>		
<b>Number of scholars in higher educational institutions</b>		
<b>Session</b>	<b>College Stage ('000)</b>	<b>Growth Rate (%)</b>
1995-1996	53.8	
1996-1997	59.5	10.6
1997-1998	56.6	-4.9
1998-1999	67.1	18.6
1999-2000	70.9	5.7
2000-2001	71.1	0.3
2001-2002	76.6	7.7
2002-2003	79.3	3.5
2003-2004	79.6	0.4
2004-2005	79.2	-0.5
2005-2006	64.1	-19.1
2006-2007	69.2	8.0
2007-2008	64.1	-7.4
2008-2009	71.5	11.5
2009-2010	78.7	10.1
2010-2011	86.9	10.4
2011-2012	90.4	4.04

*Source: Social Economic Indicators Himachal Pradesh Published by Economics Statistics Department (2013).*

During the period 1995-96 to 2011-12 number of students enrolled increased by 68.03%. Average Annual growth rate is 4.54%. In 2004-08 there was a dropout rate of approximately 27.0% of scholars but in rest of the years again there was incremental increase and finally by 2010 -11 there were 86.9% of the scholars in the colleges of the Himachal Pradesh.

Significant change is witnessed regarding gender disparity in total enrollment in general education. During 1997-98, boys enrolled were more than girls by 30%. During 2011-12 number of girls students enrolled exceeded boys by 35%. In 2002-08 there was a significant drop in the boys' enrollments in these colleges due to shift towards technical and professional education.

<b>TABLE-3</b>				
<b>Total enrollment of Boy and Girl students in Colleges for General education</b>				
	<b>Boys</b>	<b>Growth Rate (%)</b>	<b>Girls</b>	<b>Growth Rate (%)</b>
1997-1998	33330	----	23281	---
1998-1999	39794	19.4	28244	21.3
1999-2000	41302	3.8	29570	4.7

2000-2001	40771	-1.3	30289	2.4
2001-2002	42991	5.4	33560	10.8
2002-2003	42836	-0.4	36424	8.5
2003-2004	41636	-2.8	37968	4.2
2004-2005	40606	-2.5	38622	1.7
2005-2006	33762	-16.9	30378	-21.3
2006-2007	32639	-3.3	36579	20.4
2007-2008	28933	-11.4	35188	-3.8
2008-2009	31451	8.7	40024	13.7
2009-2010	34307	9.1	44435	11.0
2010-2011	37837	10.3	49082	10.5
2011-2012	38489	1.72	51950	5.84

Source: Social Economic Indicators Himachal Pradesh (2013) ,Economics Statistics Department Govt. of Himachal Pradesh.

There was one teacher for every 42 pupils in Himachal Pradesh in 1998- 99 which increased every year and by 2003-04 the ratio peaked at 1:48. In 2008-09 the ratio went up to 1:48 dropping further down to 1:43 in 2010-11.

TABLE -4			
Teacher – Pupil Ratio			
Session	Colleges	Session	Colleges
1998-1999	1:42	2005-2006	....
1999-2000	1:43	2006-2007	1:43
2000-2001	1:46	2007-2008	1:40
2001-2002	1:45	2008-2009	1:48
2002-2003	1:46	2009-2010	1:42
2003-2004	1:48	2010-2011	1:43
2004-2005	1:43	2011-2012	1:46

Source: Social Economic Indicators Himachal Pradesh (2013).

TABLE-5						
District-wise distribution of Degree Colleges						
	Degree College (2011)			Degree College (2012)		
	Govt.	Private	Total	Govt.	Private	Total
Bilaspur	4	1	5	4	1	5
Chamba	6	1	7	6	1	7

Hamirpur	5	3	8	5	4	9
Kangra	14	9	23	20	9	29
Kinnaur	1	0	1	1	0	1
Kullu	4	0	4	4	0	4
Lahaul and Spiti	1	0	1	1	0	1
Mandi	8	0	8	9	2	11
Shimla	9	0	9	9	2	11
Sirmaur	6	4	10	6	4	10
Solan	4	1	5	4	1	5
Una	5	2	7	5	2	7
Total	67	21	88	74	26	100

Source: *Selected Socio-Economic Statistics, Himachal Pradesh 2011 and 2013.*

In Himachal Pradesh, the total Govt. Colleges (67) and private colleges (21) were 88 and among them majority were in Kangra district i.e. 14 and 9 respectively, in Sirmaur i.e. 6 and 4 respectively. As 21.98% of population of Himachal Pradesh reside at Kangra, it having more college than in Lahaul Spiti (where 0.46% of population reside) or Kinnaur (where 1.23% of population reside).

TABLE-6								
Number of Higher Education Institutions (district-wise)								
	1998	2000	2002	2004	2006	2008	2010	2012
Bilaspur	2	2	2	2	2	4	4	5
Chamba	2	2	2	2	5	6	6	7
Hamirpur	4	4	6	6	6	5	5	9
Kangra	-	-	-	-	-	19	20	29
Kinnaur	-	-	-	1	1	1	1	1
Kullu	2	2	2	2	4	4	4	4
Lahaul and Spiti	-	-	-	-	-	1	1	1
Mandi	-	7	7	6	8	9	9	11
Shimla	3	3	3	3	4	6	6	11
Sirmaur	3	3	3	3	4	6	6	10
Solan	-	4	4	4	4	4	4	5
Una	-	2	3	3	5	5	5	7

Source: *Social Economic Indicators Himachal Pradesh (2012) Published by Economics Statistics Department Govt. of Himachal Pradesh and state statistical abstract (Table No.13.01)*

The number of higher educational institutes, in Chamba district in 1997 was 2 which increased to 7 in 2010; in Bilaspur District it was 2 and incremented to 5, in Shimla 3 to 9 colleges. In Una district in 1999 there was 2 colleges which was incremented to 7 in 2010, in Kangra district there was 19 colleges in 2008 which incremented to 23 in 2010. Though districts like Kangra, Una and Shimla are having more colleges in comparison with other districts of state, the trend is in line with

population trend as density of population (per KM<sup>2</sup>) in Kangra is 253, in Hamirpur 406, in Una 338, in Lahaul Spiti 2 and in Kinnaur 13

<b>TABLE-7</b>						
<b>Number of Students in Higher Education Institutions (district -wise)</b>						
	<b>2000</b>	<b>2002</b>	<b>2004</b>	<b>2006</b>	<b>2008</b>	<b>2010</b>
Bilaspur	3884	4098	4308	3828	3962	4628
Chamba	-	2390	-	2743	2569	3374
Hamirpur	6403	8183	9238	8003	6932	7107
Kangra	-	-	-	-	15876	20446
Kinnaur	231	311	330	275	292	407
Kullu	3638	4341	4509	4433	4573	6197
Lahaul and Spiti	-	-	95	60	82	-
Mandi	11927	12712	12440	11112	11630	14007
Shimla	2963	3202	3105	3777	3475	3834
Sirmaur	963	3202	3105	3105	3476	3834
Solan	4587	4732	4956	2173	4556	6274
Una	3109	3211	3220	6678	46665	6022

The growth of population from 2001 to 2011, as reported by census is highest in Una 16.24%, followed by Sirmour by 15.61%, Solan by 15.21% and negative growth rate is reported at Lahaul and Spiti by 5.10%. District-wise growth rate of students' enrollment differs significantly. For e.g. Una witnessed growth rate of 102.62% whereas Hamirpur witnessed growth rate of 14.3 % during period 1999-2010, which resulted into a situation of unbalanced education growth in different districts.

<b>TABLE 8</b>			
<b>Government Educational Institutions- district- wise (2011)</b>			
	<b>Number of Colleges</b>	<b>Number of Teachers</b>	<b>Number of Students</b>
Bilaspur	4	37	2269
Chamba	6	52	2506
Hamirpur	5	93	5032
Kangra	20	116	6204
Kinnaur	1	22	407
Kullu	4	173	5500
Lahaul and Spiti	1	12	106
Mandi	9	158	7353
Shimla	9	239	11681
Sirmaur	6	80	3121
Solan	4	121	6274
Una	5	80	3829

Total	74	1183	54282
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Source: Urban Statistics, H. P., Economics Statistics Dept., Govt. of Himachal Pradesh

The study of Number of colleges, teachers and students in Government Educational Institutions-Colleges (2011)-district -wise, five educationally rich districts of Himachal (i.e. Shimla, Mandi, Kullu, Kangra and Solan) have 62%, 68% 68% of institutions, teachers and students respectively. Kinnaur and Lahaul and Spiti enroll for just 0.94 % of students and 3.72 % of teachers.

TABLE 9			
Private Educational Institutions- Colleges (2011)- )-district-wise			
	Number of Colleges	Number of Teachers	Number of Students
Bilaspur	3	28	460
Chamba	2	26	845
Hamirpur	4	38	560
Kangra	2	38	2671
Kinnaur	0	0	0
Kullu	7	36	1738
Lahaul and Spiti	0	0	0
Mandi	2	41	1997
Shimla	1	45	895
Sirmaur	3	56	480
Solan	6	114	1237
Una	8	4	23
Total	38	390	10906

Source: Urban Statistics, Himachal Pradesh, Economics Statistics Department, Govt. of Himachal Pradesh

The study of Private Educational Institutions- Colleges(2011 reveals that five educationally rich districts of Himachal (i.e. Shimla, Mandi, Kullu, Kangra and Solan ) and Una ( sharing boarder with Punjab) accounts for 68% of institutes, 70% of teachers and 78% of students.

## SUMMARY

Himachal Pradesh ranks 13<sup>th</sup> among all States and Union Territories in India on the basis of total number of Universities , 3<sup>rd</sup> in terms of Private Universities in any state in India and 18<sup>th</sup> in terms of total college in any state in India. It has 21 Universities, out of the total 16 units set up so far, 10 have come up in Solan district, which accounts for just 9 per cent of the state's population. In fact, three universities have been set up in one panchayat. The paradoxical situation exists as regard to student enrollment. As during the session 2012-13, 55% of the sanctioned seats of private universities remained vacant. Out of 11,592 seats, only 5,329 were filled. In 2012-13, 55 per cent of the sanctioned seats of private Universities remained vacant. The composition of colleges in terms of ownership is dominated by government colleges (47%) followed by private unaided (45.7%). Further, 78% of students are enrolled in government colleges in the State. The state-wise enrollment data depicts, 81.2% students are enrolled at Under Graduate level, 6.4% at Diploma and 10.4 % at Post Graduate level. In terms of Gender, gender disparity is indicated as 51.7% are male students

and 48.3% are female students. Further, Male- female ratio in faculty and non-teaching staff is 61:39 and 80:20 respectively. Shimla, Mandi, Kullu, Kangra and Solan are five educationally rich districts of Himachal having 68% and 70% of government and private teachers, 68% of number of private educational institutions and 78% of private students. Kinnaur and Lahaul and Spiti are educationally backward districts of State having 0.94 % of students and 3.72 % of teachers in government colleges.

## FINDINGS:

1. *Problem of imbalanced and accidental institutional growth:* Himachal Pradesh is facing the problems of imbalanced and accidental institutional growth, lack of infrastructural amenities, excessive and unfair system of admissions, non-placement of degree holders, immaterial course content, gap between general and professional courses, problems of declining resources per student, high student-staff ratio, under-utilized facilities, duplicative course offerings, high dropouts and a very large share of budget is devoted to non-educational expenditures.
2. *Unbalanced Educational Development:* In Himachal Pradesh, Shimla, Mandi, Kullu, Kangra and Solan are five educationally rich districts that have 68% and 70% of government and private teachers, 68% of number of private educational institutions and 78% of private students. Kinnaur and Lahaul and Spiti are educationally backward districts of State having 0.94 % of students and 3.72 % of teachers in government colleges. District-wise imbalances in educational status and development are significant. Majority of the universities and 75% of the colleges are located in urban areas.
3. *Increasing disparities:* Although the quick expansion of population led to increased enrollments in higher education institutions still disparities are evident from data regarding enrollment of less privileged section of society like women, SC/ST, minority communities. In terms of representation of various social groups in the students, faculty and staff, in Himachal Pradesh, SC/ST/OBC/minorities are significantly under-represented. The entire group shows a back log in terms of representation.
4. *Discriminatory Education System:* Higher education in private universities and professional institutes principally benefit the most affluent households due to cost recovery pattern. Underprivileged persons cannot afford to pay the cost of higher education is deprived of educational opportunities. The advent of private universities may imply growth of cash rich disciplines at the expense of others.
5. *Quality Gaps:* Himachal Pradesh is witnessing huge qualitative gaps in terms of course offering, faculty, pedagogy, library facilities infrastructure, brand image and research outputs. For example, Himachal Pradesh University and Himachal Pradesh Technical University are having huge qualitative differences.
6. *Affiliating system:* The present affiliating system is a great hurdle in development of quality institutions. Universities have become mere examination conducting agencies rather than research oriented organizations. Even high quality institutions suffer because while farming curriculum and regulating colleges, Universities are more considerate to problems of colleges situated in tribal and rural areas and resultantly, performance benchmarks are lowered.

7. *Pedagogy and curricula changes*: GATS has restricted a nation's ability to develop its own educational system which has its own unique social, cultural and political impacts. Foreign providers bring with them overseas curriculum which mostly may have narrow relevance to the importing countries' socio-cultural contexts. Higher Education Institutions have started amending their pedagogy and curricula accordingly. In the light of changing educational environment, most of the teaching departments in Himachal Pradesh University, Shimla have designed the course curriculum either as per the requirement of the market or have adopted courses under various UGC schemes to get financial grants.

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