Effectiveness of India's National Program to Save the Girl Child: Experience of Beti Bachao Beti Padao (B3P) Program from Haryana State

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Abstract: India's government has introduced a national program to save and educate children, Beti Bachao Beti Padhao (B3P), by strict ban on sex determinant abortion prenatal Diagnostic Technique and Surgical Termination Acts of Pregnancy, and social mobilization. This research was undertaken to determine the efficacy of the intervention to increase the sex proportion at birth (SRB) in Haryana state. Prearranged SRB data (characterized as girls per 1000 boys) have been obtained for the entire state from the civil registration system. Haryana to evaluate the impact of B3P program. The study of time series regression has used to estimation the change in SRB subsequently program B3P. The sex ratio condition in Haryana has also improved over the time from 827(in 2005) to 900 (in 2016). The B3P program has successfully changed the mentally of the people towards the girl children and they also motivated to educate them in rural area. The sex ratio is also improving at various rural area of India.

Keywords: Sex ratio at birth, PNDT Act, MTP Act, Time series analysis.

INTRODUCTION

After its first census in 1871, a sex ratio at birth (SRB), which favors boys, has been obvious in India. Until then, beginning with the seminal paper by Amartya Sen, several writers have decorated the story of missing girls in India who are lost either through sex-selective abortions or biased child rearing performs that lead to higher infant mortality rates among girls between 0 and 4 years. Sen reports a discrepancy of almost 37 million women [1]. Later other experts and colleagues, using the data from India's 3-point census registered almost 3.2 to 3.5 million abortions in India between 2008 and 2012. Fig. 1 illustrated a social message to promote the importance of education of the girls.

Fig.1: A Social Message to Propagate the Idea of Girl Education

The distorted SRB is a representation of society's heavy son choice. More specifically, in most Indian states, SRB, which is unfavorable to females, is evident regardless of the disparities in stages of schooling, income, womenfolk empowerment or any related parameters. An significant reality that appears is that although the gender ratio in the early periods has been explained additionally by abandonment of the girl child, its associated primary year's mortality, the decrease in the gender ratio in recent years has donated much additional to the decrease in SRB itself.

In addition, this decrease in SRB has caused by gender selective abortions, motivated by the unchecked propagation of medical devices used in unlawfully determine the gender of foetus. A motivating examination

demonstrations an opposite association between SRB and the density of prenatal diagnostic facilities in different Indian states. The projected worth for the Indian sex identification market exceeds US$ 100 million per year. Fig.2 has been showing the why the idea of the saving girls toddler is important [2].

Fig.2: A Message to Showing the Importance of the Saving Girls

This led to substantial public debate on the issue, that contributed to the performing of India's first sex-ratio disparity law, the 1994 Prenatal Diagnostic Techniques (PNDT) Act, which was later amended in 2003 to provide additional room for policy oversight and rewritten as the 'Pre-Conception and Pre-Natal Diagnostic Techniques (PC-PNDT) Act.' This Act resulted in the prevention of sex discrimination, the control of new born testing techniques for the identification of genetic defects by limiting the use of genetic abnormalities at the registered place and eligible persons. Yet not astonishingly, an assessment of the PCPNDT Act reveals no effect on India's sex-ratio. Fig. 3 has been showing a post stamp to campaigning the idea of beti bachao beti padao [3].

Fig.3: A Post Stamp for Beti Bachao, Beti Padao

The various department of the government has done a lot of work to fight the thinking of the gender discrimination among the masses. The department related with the health, women, education, police as well as public prosecution are come forward as combined force to instigate the people towards girl education. The fact is that Education is the only mean to reduce the tendency of the people to abort the girl child and education will also help the people to change the mentality towards the females. The combined effect of the different department has carried out various raid to identified various hospitals and practitioners who are indulged in the task of the sex determination at their facilities. This mission had launched in the year of 2015, and after this, a sudden fall out have seen in the cases of the gender discrimination. The local police have group with the law agencies to trap the culprits. Fig.4 has been showing the frame work for the pan India campaigning of the Beti Bachao, Beti Padao [4].
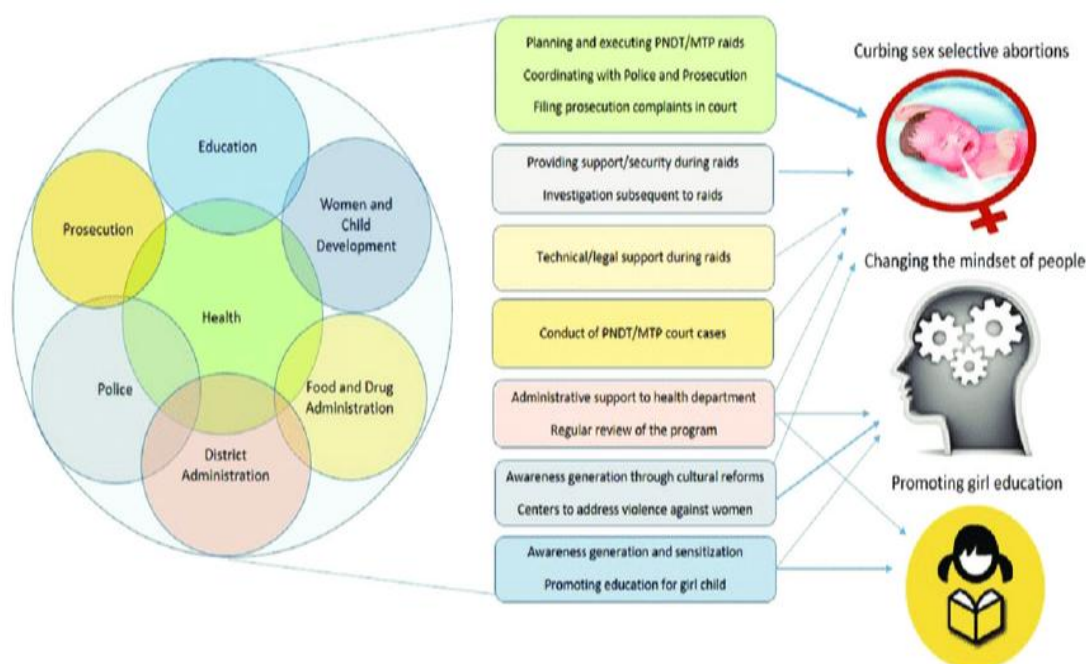
Fig.4: Conceptual Framework for Beti Bachao Beti Padhao Program

Apart from cases involving breaches of the PC-PNDT Act, less than 100 FIRs were also registered in that state under the MTP Act. Also basic operating procedures for investigating FIR cases were developed and distributed to all the departments concerned. To about 300 police officers / public prosecutors, training-cum-sensitization seminars were held on different legal problems involved.

Besides District Administration interventions including the Department of Women and Child Development's Department of Police and Health sponsored seminars to increase consciousness on the girl child subject, although the Registrar General of the Indian Birth as well as Death Register Office in Haryana supported birth registering and implemented instruments for tracking SRB amongst recognized delivery. In addition to its use on official documents, the B3P symbol was mounted on all scholastic institutes besides municipal transit lorries to generate awareness. An official was also appointed in one district stamped B3P. In addition, the State Government has also taken steps to raise consciousness among societies and local management bodies, such as panchayats, of taking action against female foeticide and of creating a sympathetic environment for girl child development. This involved 28 920 community education meetings, 16 306 exhibition boards, 3082 film broadcasts, 18 311 signature movements, 68 570 wellbeing movements and birthday celebration 400,000 Children Womens. In addition to offering arrangements for better instructive opportunities for girl children, this led to a powerful behavioral improvement program to encourage girl child inclusion in the society[5].

Fig.5: Sukanya Saamridhi Yojana (Girl Welfare Scheme)

Fig.5 has been showing the Schemes such as Sukanya Saamridhi Yojana have been launched aimed at girl child monetary protection along with free / subsidized admission schemes for girls in designated private schools. Renowned figures in the fields of athletics, culture, and education supported the reason by as long as media coverage. Even there, after additional than a year after its introduction, there was no systematic study documenting its effects[6].

Whilst the use of review information is useful for reporting association of various sex-ratio variables does not yield accurate SRB estimates. Lastly, routine CRS data was fairly incomplete up until about a decade ago.

Therefore, we pursued this research recording the effectiveness of the B3P system SRB, in Haryana state, India. Three considerations favored our decision to conduct the present study from the perspective of the Haryana state — initially, the state has one of the lowermost SRBs at birth at baseline, furthermore, data on CRS recorded to be fairly complete since 2005 and finally, since the B3P system has been introduced and applied with comparatively superior strength in the state. Fig .6 has been showing the official logo of Beti Bachao Beti Padhao Program.

Fig.6: Official Logo of Beti Bachao Beti Padhao Program

Education and literacy are significant pointers in a civilization besides show a significant role in human's expansion which has an impact on the overall social and economic development environment. Higher alphabetization rate and education leads to improved health besides nutritional success, financial development, populace management, liberation of the feebler groups, and of the entire society. Similarly, higher literacy rates consistently boost indices of growth. Census gets details for each individual, literacy is recognized as one of the greatest significant social aspects specifications. In census, a individual eight years of age and over who could read as well as write it is regarded as 'literate' in any language. An individual who can read only, but cannot write, isn't considered to be 'alphabetical.' A person does not need to be given any official education or permit any minimum level of education. Alphabetization of adult literacy programs can also be done or by any non-formal method of teaching. Blind people are able to read in braille was regarded as alphabets. All children aged six or under are preserved as 'illiterate,' even if the child goes to institute and learnt the skills of reading and writing [7].

Context and Background
The Haryana has seen the lowest sex ratio among all state. The Haryana has problem with the girl education as the most of the papulation of the Haryana has engaged in the work of the agriculture and allied services. There was a time, when the gender ratio in Haryana was 857 and that was very low in comparison to rest of the India. Jhajjar ,Mahendragarh, Rewari and Faridabad are the worst performing states in the counting of the gender equality[7].

Study design
The B3P plan was concurrently introduced in the state's 21 districts, leaving little ability to conduct the assessment using either a randomized measured project or a circumstance control test. The Intermittent Time Series (ITS) research approach was then used to measure the effect of B3P interference on rest of state.

Data Source
Monthly SRB data for all districts as from January CRS collected 2005 to September 2016. The B3P system kicked off in January 2015 in Haryana, India. Since the initial months the software approaches have been established and beginning of launch. It will also take the averted sex-selective abortions for expressed results in SRB for at least 6 months. So, it was June 2015 considered the real time for start of the intervention instead, it was January 2015. Consequently, between January 2005 and June 2015 was viewed as the time of pre-intervention, and July 2015 as of September 2016 the post-intervention period was considered to impact assessment. Just 1 percent of the total data we found was incomplete. To blame missing info, preceding and successor averages in the same district the month value was used to fill the missing value. Table .1 has been showing the data of sex ratio of census 2001 and 2011 of different district of Haryana [8].

Table 1: Sex Ratio of Two Census Report

S.No.	District	Census 2001	Census 2011
1	Mahendragarh	818	775
2	Rewari	811	787
3	Jhajjar	801	782

4	Sonipat	797	776
5	Ambala	771	806
6	Kurukshetra	762	820
7	Rohtak	785	819
8	Karnal	810	813
9	Yamunanagar	804	815
10	Kaithal	781	816
11	Bhiwani	831	821
12	Panipat	810	827
13	Gurgaon	806	829
14	Jind	817	827
15	Faridabad	837	822
16	Hisar	812	831
17	Fatehabad	817	823
18	Sirsa	806	851
19	Panchkula	818	853
20	Palwal	843	853

Interrupted time series

As with most community fitness initiatives where controlled randomized tracks are logistically complicated, creative ways to introduce effect evaluations continue to change. Assessment of such commonly applied social strategies, driven precisely by smaller time frames, can be carried out with the help of studies before and after, or ITS studies. In ITS examination the information is obtained at dissimilar times to notice whether or not the action needed a much greater impact than any secular fundamental phenomenon. A comparative analysis of time patterns before and after action is the preferred approach for evaluating the ITS research. Analysis of the time series using integrated moving average of auto regressive (ARIMA) one way to interpret data is through models. Table .2 has been showing the average of two year of sex ratio at birth of some of the Indian states [9].

Table 2: Comparison of Sex Ratio of Some Indian States

State	2013-15	2012-14	2011-13
Andhra Pradesh	908	912	918
Assam	899	907	919
Bihar	914	905	907
Chhattisgarh	951	963	969
Delhi	858	868	875
Gujarat	842	904	913
Haryana	821	854	847

The level shift calculation stretches the transformation amongst the rate experiential and that expected by the time trend of pre-intervention. The pattern shift calculation estimates the difference between the Slopes of post- and pre-intervention.

To measure Level as well as Trend estimates by means of segmented regression of the time series the subsequent equation is implemented. If the amount for time is $\beta 1$, for interaction phase is $\beta 2$ and regression pattern was:

$$\text{Outcome (SRB)} = \text{Constant} + \beta 1 * \text{Time} + \beta 2 * \text{Phase} + \beta 3 * \text{interaction} \quad \ldots\ldots\ldots\ldots\ldots.. (1)$$

As portion of this method, it was appropriate to organize the entire data in a specific fashion consisting of variables above described. In the first variable 'outcome' was included the modified SRB time sequence. The time points (1–144) have been applied to the 'time period' component. Regression of the time series was practical at the static rate for viewing shifts in patterns over the year's intervention B3P. Table .3 has been showing the literacy percentage of male, female and total in last four census report. This table also helps to find out the huge gap between the male and female education in last four census report [10].

Table 3: Comparison of Literacy Rate in Last Four Census Report

Year	Literacy rate			Gap in literacy
	Persons	Males	Females	
1981	42.5	54.3	28.5	25.5
1991	51.1	63.2	38.2	25.7
2001	63.7	74.2	54.4	22.4
2011	72.2	81.1	66.4	17.4

The cited approach also relies on the use of the ARIMA model, which actually forecasts the time series data taking into account the relationship between of data point and a single previous lag. Nonetheless, a better parsimonious model of SARIMA used in this analysis assesses the general effect of B3P activity. In judgement to ARIMA the benefit of bearing in mind the SARIMA method lies in fact that sideways with auto reverting order as well as poignant regular data order , it can also be used command of the seasonality found in the data compared to humble model ARIMA.
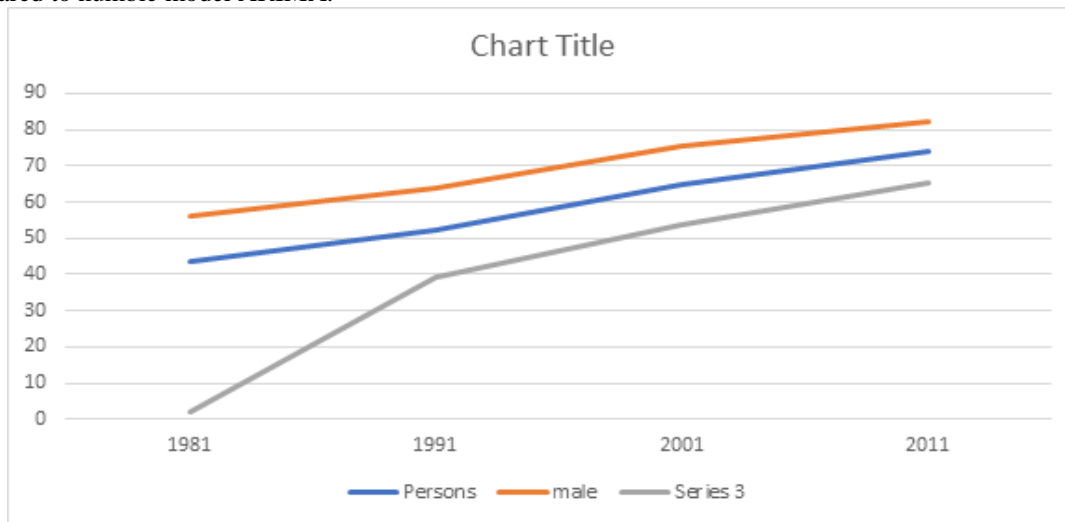

Fig.7: Literacy Gap between Males and Female in Haryana

Toughness of the measured SARIMA method also validated over the ARIMA model with the support at the same time, robustness of better accustomed R square value, significant autocorrelation value as well as improved residual graphs. The specifics of ARIMA as opposed to the SARIMA model were introduced in order to prevent ambiguity and to keep the accepted methodology congenial additional Materiel. Fig .7 has been drawn on the basis of the table 3 and it has been showing that female education rate is far below than the average literacy rate of the Haryana state.

Sarima Model
The required SARIMA was established before estimates were determined trend change by means of manifold regression method. To find out what SARIMA model is suitable for the static stage, sequence the series plot had been drawn to see the pattern. Furthermore, in seasonal besides non-seasonal lags, the correlogram helped define the order of autoregressive and average commands [6].
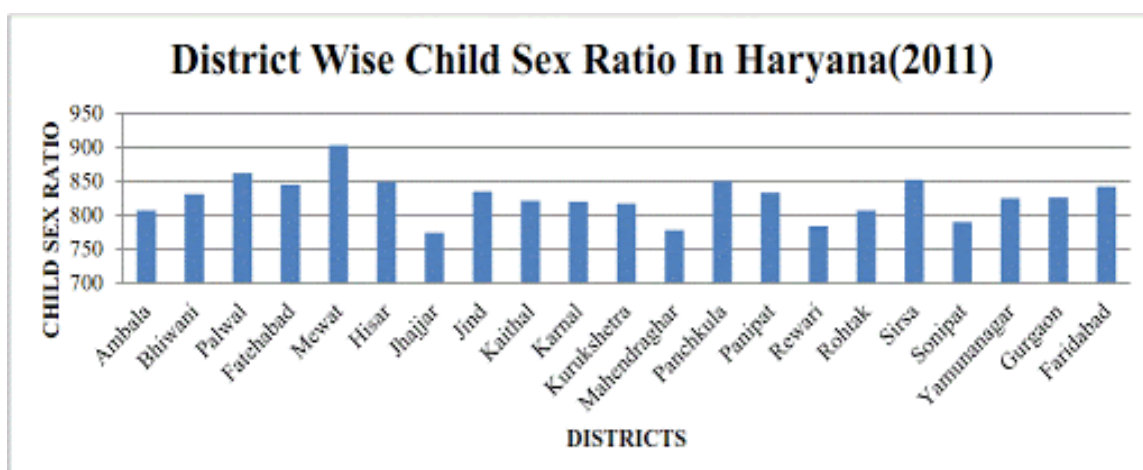

Fig.8: District Wise Sex Ratio in Haryana

RESULT AND DISCUSSION
The inequality in gender at birth was a critical issue in the Haryana and still it is a vivid topic to be discuss. In the 2005, the sex ratio was 827 but after make people understandable about the girl importance, the ratio has turned up to 900 after the working by the government and other agencies in 2016. The regression analysis has

been implemented in order to find out the average increment in the sex ratio in every year and find out the incremental pattern of the ratio of the gender at birth of the babies. It has been found that on average basis, 0.20 units every month changes have noticed. The implementation of the B3P has changed the pattern of the sex ration at birth. The collaborative effort of the local and central government has changes the noticeable changes.

CONCLUSION

Recent observations are of great importance to India as well as other low and middle income nations have a skewed sex ratio issue. In addition, historical examples of system ineffectiveness such as PC-PNDT posed a major anxiety can policy tackle the problematic of sexual imbalance? Under this context, our results offer hope that the issue will be conducive to policy act, given the employment rigorously meets policy prescriptions. The need to concentrate on execution emerges in light of the existence of the issue. In the present sense, in particular, the potential parent and the healthcare professional would favor all involved parties in sex-selective pregnancy transactions. They both thus have obstinate economic and social inducements, correspondingly, to fail to comply with the regulation. To fight this conspiracy, the government will also need to devise steps. It might use decoy patients to create intimidation among the suppliers, as in the present situation. Of course, such steps are only expected to last until the software becomes vigilant against mistakes.

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