
An Analysis of Road Dust Samples to Understand the Influence of Vehicle Density on the Heavy Metal Accumulation in Kannur District, Kerala, India

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Abstract: *The present study is an attempt to assess the heavy metal buildup in road dust samples of heavy traffic areas of Narath Panchayath, Kannur district. Samples have been collected from the roadside and are analyzed using X-Ray Fluorescence (XRF) spectroscopy technique. The study also deals with health effects associated with heavy metal accumulation in the study area by calculating and interpreting the various hazard index parameters such as contamination factor, enrichment factor, geo-accumulation index, pollution load index, and degree of contamination. The concentration of heavy metals such as Fe, Co, Ni, Cu, Zn, As, Cd, and Pb has been quantified and reported in the ppb units. It is observed that the study area has a specific higher concentration of Fe and a lower concentration of Cd. The index parameters were calculated from the observed concentration of heavy metals and thereby pollution rate is understood. The study indicates that the metallic dust emitted from the vehicles significantly contributed to the heavy metal concentration in the area. The buildup of heavy metals is also influenced by traffic density, weather conditions, and human and industrial activities in that area. The detailed results and discussion of the present systematic investigation are given in the manuscript.*

Key Words: *Heavy Metal, Accumulation, XRF, Hazard Index Parameter, Concentration.*

Introduction

Nowadays, the rate of environmental pollution is quite high and rather accelerated pace. The contamination of any part of the environment can be considered pollution and it changes the structure of the environment and causes an imbalance in the natural environment. In general, environmental

pollution is the effect of undesirable changes in the surroundings that have harmful effects on plants, animals, and human beings. The pollution is caused by human activities, and undesirable substances, which ultimately have a detrimental effect on the environment. The air, water, soil, radioactive, thermal and heavy metal pollution, etc. are a few of the significant types of pollution.

The present work is an attempt to understand heavy metal pollution in some selected regions of the environment. The sources of heavy metal pollution may be natural or anthropogenic. Heavy metal contamination of soil has a serious concern as heavy metal components of soil are arsenic, cadmium, mercury, lead, zinc, and chromium. The areas near metal industries, and metal smelting and mining are the regions where heavy metal contamination is reported high. The heavy metals are poisonous even at low concentrations and they are non-degradable. The identified best solution to mitigate the soil pollution due to heavy metal accumulation is planting of trees which are bio-accumulators of heavy metals and that can also keep the environment evergreen.

Materials and Methods

The heavy metal contamination of road dusts in Narath Panchayath located at Kannur district is analyzed using the X-Ray Fluorescence technology. The latitudes and longitudes of the sampling points have been noted using GPS map camera. The location and road mapping are done using the geographical data (Fig.1). The samples have been collected following the standard procedure and analyzed using well established nuclear techniques. Rate of pollution in the environment of the region and associated health effects have been understood by calculating and interpreting the pollution index parameters. The pollution indices such as contamination factor (CF), enrichment factor (EF), geo-accumulation index (I_{geo}), pollution load index (PLI), and degree of contamination (C_d) are calculated and analyzed for better understanding of the heavy metal contamination and risk to the environment. The calculation of pollution indices were done using the standard equations well reported in scientific journals (Vineethkumar et al., 2020).

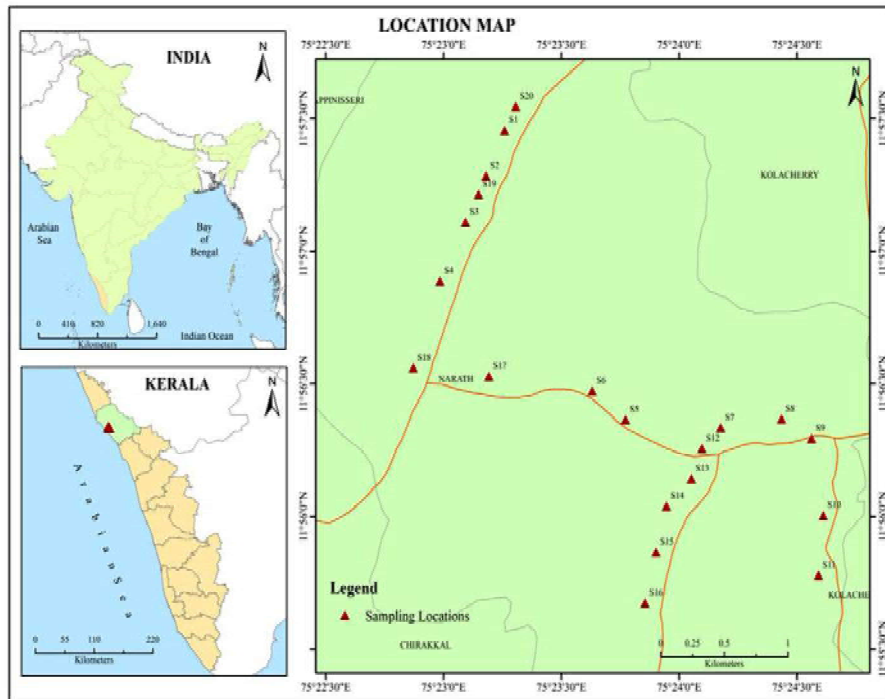


Fig. 1: Location map of the study area

1. Contamination Factor (CF)

Contamination factor is the ratio of concentration of element 'x' and concentration of reference element.

$$CF = (C_x)_{\text{sediment}} / (C_x)_{\text{reference}}$$

Where, $(C_x)_{\text{sediment}}$ refers to the concentration of element 'x' and $(C_x)_{\text{reference}}$ is the concentration of reference element. The level of contamination can be classified on the basis of CF as given below.

Contamination Factor	Contamination Level
CF < 1	Low contamination
1 ≤ CF < 3	Moderate contamination
3 ≤ CF < 6	Considerable contamination
CF > 6	Very high contamination

Rudnick and Gao (2003), Salah et al. (2012)

2. Enrichment Factor (EF)

Enrichment factor is the ratio of the concentration ratio of element 'x' to Fe in sediment sample and unpolluted reference sample.

$EF = (C_x/C_{Fe})_{\text{sediment}} / (C_x/C_{Fe})_{\text{reference}}$ Where, $(C_x/C_{Fe})_{\text{sediment}}$ and $(C_x/C_{Fe})_{\text{reference}}$ denote the concentration ratio of element 'x' to Fe in sediment sample and unpolluted reference baseline respectively. The sediment quality can be classified based on enrichment factor as given below.

Enrichment Factor	Sediment Quality
EF < 2	Deficiency to minimal enrichment
2 < EF < 5	Moderate enrichment
5 < EF < 20	Significant enrichment
20 < EF < 40	Very high enrichment
EF > 40	Extremely high enrichment

Barbieri (2016), Mei et al. (2011)

3. Geo-accumulation Index (I_{geo})

Geo-accumulation index was introduced by Muller. It is classified into seven classes according to the pollution intensity. It can be calculated by the equation

$$I_{\text{geo}} = \log_2[C_x/1.5B_x]$$

Where, C_x is the concentration of metal 'x' in the sediment and B_x is the geo-chemical background value of metal 'x'. The factor 1.5 is used in the equation to compensate the variation in background data due to lithogenic effects. The pollution intensity can be classified on the basis of I_{geo} as given below.

Geo-accumulation Index	I_{geo} class	Pollution Intensity
>5	6	Very strongly polluted
>4 – 5	5	Strong to very strongly polluted
>3 – 4	4	Strongly polluted
>2 – 3	3	Moderately to strongly polluted
>1 - 2	2	Moderately polluted
>0 - 1	1	Unpolluted to moderate polluted
<0	0	Practically unpolluted

Muller (1979)

4. Pollution Load Index (PLI)

Pollution load index is the product of contamination factor of all the samples raise to the power of. $(1/n)$ Pollution load index can be calculated by

$$PLI = [CF_1 * CF_2 * CF_3 * \dots * CF_n]^{1/n}$$

Where, CF_n is the value of contamination factor for metal 'n' and 'n' is the number of metals present in the analysis. The classification of pollution level on the basis of PLI is given below.

Pollution Load Index	Pollution Level
≤ 1	No metal pollution
>1	Metal pollution exist

Tomlinson et al. (1980), Bramha et al. (2014)

5. Degree of Contamination (C_d)

Degree of contamination is the average of contamination factors of all the samples. It can be determined by

$$C_d = \frac{\sum CF}{n}$$

Where, CF is the contamination factor and n is the number of analyzed heavy metals. The classification of contamination status on the basis of modified degree of contamination is shown below

C_d Level	Contamination Status
$C_d < 8$	Low degree of contamination
$8 \leq C_d < 16$	Moderate degree of contamination
$16 \leq C_d < 32$	Considerable degree of contamination
$C_d \geq 32$	Very high degree of contamination Indicating serious anthropogenic pollution

Bramha et al., 2014, Sivakumar et al., 2016

Results and Discussion

The statistical data of concentration heavy metals in the road dust soil samples collected from Narath Panchayath is given in the Table 1. The results indicate that Narath Panchayath has higher concentration of Fe (2574 ppm) and lower concentration of Cd (5.34 ppm). The concentration of heavy metals decreased from Fe > Zn > Ni > Co > Pb > Cu > As > Cd.

The Fe concentration ranges from 15632 ppm to 40151 ppm. The average crystal value of Fe is 47200 ppm (Vineethkumar et al., 2020), and the observed value is 25741 ppm. The concentration Zn ranges from 207 ppm to 725 ppm. The average crystal value for Zn is 95 ppm, and the observed mean value is 468.91 ppm. The Ni concentration ranges from 26.4 ppm to 142.1 ppm. The average crystal value for Ni is 68 ppm, and the observed mean value is 62.16 ppm. The concentration of Co ranges from 25 ppm to 96 ppm. The average crystal value of Co is 19 ppm, and the observed mean value is 61.55 ppm. The Pb concentration ranges from 11.5 ppm to 76.4 ppm. The average value of Pb is 20 ppm, and the observed mean value is 36.79 ppm. The Cu concentration ranges from 12.3 ppm to 52.12 ppm. The average crystal value is 45 ppm, and the observed mean value is 27.36 ppm. The concentration of Arsenic (As) ranges from 2.5 ppm to 9.8 ppm. The average reference crystal value of As is 13 ppm, and the obtained mean is less than average crystal value. The Cd concentration ranges from 1.45 ppm to 8.2 ppm. The average crystal value of Cd is 0.3 ppm, and the obtained mean value is 5.34 ppm.

Table 1: Statistical Parameters of Heavy Metals Concentration

Statistical Parameters	Fe	Co	Ni	Cu	Zn	As	Cd	Pb
Mean	25741	61.55	62.16	27.36	468.91	5.65	5.34	36.79
Minimum	15632	25	26.4	12.3	207	2.5	1.45	11.5
Maximum	40151	96	142.1	52.12	725	9.8	8.2	76.4
Std. Deviation	7634.1	22.52	35.29	10.06	147.12	2.02	1.94	19.18

The contamination factor of Fe, $CF < 1$ indicates low level of contamination. The enrichment factor of Fe, $EF < 2$ means the deficiency to minimal enrichment. The geoaccumulation index shows that the samples are practically unpolluted. The contamination factor of Zn, $CF > 6$ indicates that the contamination level is very high. The enrichment factor of Zn, $5 < EF < 20$ means enrichment is significant. The geoaccumulation index shows that samples are moderately polluted. The contamination factor of Ni, $CF < 1$ indicates that the contamination level is low. The enrichment factor of Ni, $2 < EF < 5$ means the enrichment is moderate. The geoaccumulation index shows that samples are practically unpolluted. The contamination factor of Co, $1 \leq CF < 3$ indicates the moderate level of contamination. The enrichment factor of Co, $2 < EF < 5$ indicates the enrichment is moderate. The geoaccumulation index shows that the samples are in the category unpolluted to moderate polluted. The contamination factor of Pb, $1 \leq CF < 3$ indicates moderate level of contamination. The enrichment factor of Pb, $2 < EF < 5$ shows the moderate enrichment. The geoaccumulation index shows the samples are practically unpolluted. The contamination factor of Cu, $CF < 1$ indicates low level of contamination. The enrichment factor of Cu, $EF < 2$ means the deficiency to the minimal enrichment of heavy metals. The geoaccumulation index shows that the samples are practically unpolluted. The contamination factor of As, $CF < 1$ indicates low level of contamination. The enrichment factor of As, $EF < 2$ indicates the deficiency to minimal enrichment. The geoaccumulation index indicates that all the samples are practically unpolluted with the presence of As. The contamination factor of Cd, $CF > 6$ indicates high level of contamination. The enrichment factor of Cd, $EF > 40$ indicates extremely high enrichment. The geoaccumulation index reflects the samples are moderately to strongly pollute with the presence of Cd.

Table 2: Contamination Factors of Heavy Metal Concentration

Contamination Factor	Fe	Co	Ni	Cu	Zn	As	Cd	Pb
Mean	0.55	3.24	0.91	0.61	4.94	0.43	17.79	1.84
Minimum	0.33	1.32	0.39	0.3	2.18	0.19	4.83	0.58
Maximum	0.85	5.05	2.09	1.16	7.63	0.75	27.33	3.21
Std. Deviation	0.16	1.19	0.52	0.22	1.55	0.16	6.45	0.96

Table 3: Enrichment Factors of Heavy Metal Concentration

Enrichment Factor	Fe	Co	Ni	Cu	Zn	As	Cd	Pb
Mean	1.00	6.62	1.83	1.27	9.85	0.82	37.43	3.65
Minimum	1.00	3.13	0.56	0.32	4.80	0.10	9.41	1.15
Maximum	1.00	14.92	6.17	3.06	20.14	1.64	80.71	8.94
Std. Deviation	0.00	3.60	1.35	0.69	4.60	0.38	20.56	2.27

Table 4: Pollution Load Index and Degree of Contamination

Parameter	Pollution Load Index	Degree of Contamination
Mean	1.60	3.79
Minimum	1.23	2.26
Maximum	2.07	5.50

Conclusion

The study indicates that the enhanced level of heavy metal concentration in road dust samples may be due to the metallic dust emitted from the vehicles. The concentration of heavy metals in road dust depends on the factors such as traffic density, weather conditions, human, and industrial activities in the area. The higher concentration of heavy metals can adversely affect the health of human beings residing near to elevated traffic density roads. The cause of heavy metal pollution also includes exhaust gases, brake pads, rubber tyres, oil leakages, and metal abrasions from motor vehicles. The pollution index clearly indicates that the carcinogenic metal does not possess any significant health risk to the inhabitants. Due to increasing population

and vehicle density in the district, the intensity of pollution may increase along the national highway in the days to come. Certain protective and decisive measures for controlling and administering the vehicle density, promoting public transportation and encourage use of eco-friendly vehicles, relocating the residential areas away from the NH corridors are to be promoted.

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Employee Retention Strategies Adopted by Companies in Kerala: A Case Study

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Abstract: *Employee retention is the systematic effort to retain the current employees by providing best policies and to recognize various expectations of the employees. The challenge is not only to attract the talented employees and to retain them. This study analyzed the organizational factors influencing the employee retention and revealed individual factors leading employees to leave the organization and examined the necessary conditions to retain the employees. The major findings derived from the analysis precisely discloses that the respondents are satisfied with compensation benefits and working environment, the employees feel that their work load is fairly distributed.*

Key Words: *Employee, Retention Strategies, Companies, Kerala.*

1. Introduction

Human Resource Management (HRM) is the strategic and coherent approach to the management of an organization. It includes a variety of activities and key among them is deciding what staffing needs exist and whether to use independent contractors or hire employees to fulfil these needs; recruit and train the best employees, ensure they are high performers; dealing with performance issues, and ensuring the personnel and management practices conform to various regulations (Ananthan, B.R and Sudheendra Rao L.N, 2011). Usually, small businesses have to carry out these activities themselves. However, they should always ensure that employees have and are aware of personnel policies which conform to current regulations. These policies are often in the form of employee manuals which all employees must have (Beardwell. J and Wright. M, 2012).

HRM is a techniques, when properly practiced, are expressive of the goals and operating practices of the enterprise overall and is seen by many to have a key role in risk reduction within organizations (Budhiraja, S and Malhotra.

M, 2013). Many years ago, large organizations looked to the “Personnel Department” mostly to manage the paperwork around hiring and paying people. More recently, organizations have begun to consider the “HR Department” as playing a major role in staffing, training, and helping manage people so that the people and the organization are performing at maximum capability in a highly fulfilling manner (Hay Group Insight, 2009).

1.1. Employee Retention: Effective employee retention is a systematic effort by employers to create and foster an environment that encourages current employees to remain employed, by having policies and practices in place that address their diverse needs. A strong retention strategy, therefore, becomes a powerful recruitment tool (Doh Jonathan, et. al., 2011). Employee Retention involves taking measures to encourage employees to remain in the organization for the maximum period of time. It is a process in which the employees are encouraged to remain with the organization for the maximum period of time or until the completion of the project. Employee retention is beneficial for the organization as well as the employee. Effective employee retention is a systematic effort by employers to create and foster an environment that encourages current employees to remain employed, by having policies and practices in place that address their diverse needs (Kossivi. B, Xu. M. and Kalgora. B, 2016). Employee retention is a vital issue and challenge to all the organizations now a day. There are number of factors which promote the employees to stay or leave the organization (Sarah Leidner and Simon Smith. M, 2013). It may be external and internal factors. Human resource practices counts a lot in this regard. It is the need of the hour that HR managers should identify the needs of the employee and adopts retention strategies.

In the competitive world where every organization is trying to gain maximum results and employees especially the youth looking for opportunities to fulfil their demands the retention of an individual in an organization for long period is very relevant. It’s important to understand the various problems an organizations faces in order to maintain the employees and use methods to overcome these problems and retain employees in the organization. Hence this study attempted to analyse the retention strategies adopted by companies in Kerala.

1.2. Objectives: The main objectives are:

- i. to study the employee engagement programs offered by companies,
- ii. to study organizational factors influencing retention strategies, and
- iii. to examine necessary conditions to retain the employees

1.3. Review of Literature: Holtom, et. al. (2008) and Hay Group (2009) discussed that factors that makes the employee for staying and leaving were different. Chitra Devi and Latha (2011) conducted a research on employee retention in IT sector. Tripathi, et. al. (2011) attempted to analyse the problems faced by the professional institutions. Onyango (2014) found the positive correlation between direct and indirect financial rewards and employee retention. Alkhawaja and Arwa (2017) while discussing the leadership style and employee turnover stated that increase in turnover is due to unbalanced treatment of employees. Priyanka and Dubey S.K. (2016) proved that there are certain responsibilities which accounts for job satisfaction. Rashmi (2016) explained that in a competitive environment, survival of organization becomes very tough because there is increase in poaching of employees. Rema Priya (2019) observed that the biggest challenge the organizations faced is managing and retaining resources.

2. Materials and Methods

The data were collected through primary and secondary sources. Primary data were collected through direct observation, personal interviews and questionnaire. The respondents were selected by using non profitability convenient sampling from all departmental employees of Abreco Freight Pvt. Ltd, Ernakulam, Kerala; for the study, 50 samples were taken. Secondary data were collected from company records, annual reports of the company and company brochure. Percentage and Chi-Square Test were used for data analysis.

3. Results, Analysis and Discussion

3.1. Relationship Between Experience of the Employees and Job Stimulating and Challenging for Better Performance in the Company:

Table 1 shows that there is no significant relationship between experience of employees and job stimulating and challenging for better performance in the company.

Table 1: Experience of the Employees Versus Job Stimulating and Challenging

Experience	Strongly Agreed	Agreed	Neutral	Disagree	Total
< 1 year	0	1	0	0	1
1-3 years	2	5	2	0	9
3-5 years	6	6	2	1	15
> 5 years	4	17	4	0	25
Total	12	29	8	1	50
Chi square	6.88				

Source: Primary data

3.2. Age of the Employees and Level of Satisfaction Regarding Health and Safety Measures Provided by the Company: The calculated value of Chi square test (6.72) is lesser than table value, shows that there is no significant relationship between age of the employees and level of satisfaction regarding health and safety measures provided by the company (table 2).

Table 2: Age of Employees and Level of Satisfaction

Age	Highly Satisfied	Satisfied	Neutral	Total
20-25	2	3	1	6
25-35	5	13	3	21
35-45	2	8	6	16
Above 45	1	2	4	7
Total	10	26	14	50

Chi square 6.72

Source: Primary data

3.3. Relationship between Educational Qualification of Employees and Job Satisfaction: From the analysis, the calculated value of Chi square test, 59.56, is greater than table value. This shows that there is significant relationship between educational qualification of employees and job satisfaction (table 3).

Table 3: Relationship between Educational Qualification of Employees and Job Satisfaction

Experience	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Total
Upto +2	1	1	0	0	2
Upto UG	2	11	6	3	22
Upto PG	5	6	5	2	18
Upto Diploma	2	5	1	0	8
Total	10	23	12	5	50
Chi square	59.56				

Source: Primary data

3.4. The Main Reason for Leaving the Previous Job: 38% of employees response is that the main reason to leave the previous job is lack of job satisfaction, 26% of employees states that lack of recognition is the main reason to leave the previous job, where 22% of employees left the previous job due to poor work culture and remaining 14% left the job due to other personal or impersonal reasons (table 4). It is analyzed that the factors like job satisfaction, recognition and work culture plays an important role in retaining employees.

Table 4: Reason for Leaving Previous Job

Reason	No. of respondents	Percentage (%)
Lack of Job Satisfaction	19	38
Lack of Recognition	13	26
Work Culture	11	22
Others	7	14
Total	50	100

Source: Primary data

3.5. Reason for Joining the Present Organization: 40% of employees expresses that the reason to join is that they offer flexibility of time in work space, 32% of employees expressed good benefit is the reason and 14% answered since they haven't got any other and remaining 6% has stated attractive lifestyles (table 5).

Table 5: Reason for Joining the Present Organization

Reason	No. of respondents	Percentage (%)
Good Benefit	16	32
Flexibility of time	20	40
Attractive lifestyles	3	6
Did not get a better job	7	14
Total	50	100

Source: Primary data

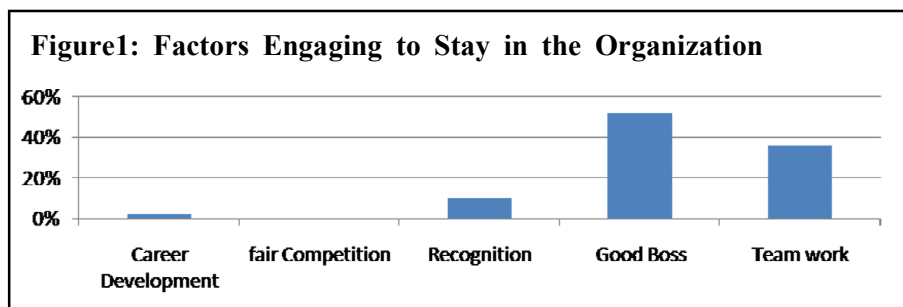
3.6. Relationship Between Employee Retention and Salary: Table 6 shows that, calculated value (22.53) is greater than table value; and there is a relationship between the employee retention and salary.

Table 6: Relationship Between Employee Retention and Salary

Salary Range (Rs)	Highly Satisfied	Satisfied	Neutral	Highly Dissatisfied	Dissatisfied	Total
5K - 15K	0	2	2	1	3	8
15K - 25K	1	2	3	3	2	11
25K - 35K	3	6	6	2	1	18
Above 35K	8	3	1	1	0	13
Total	12	13	12	7	6	50

Chi square 22.53

Source: Primary data

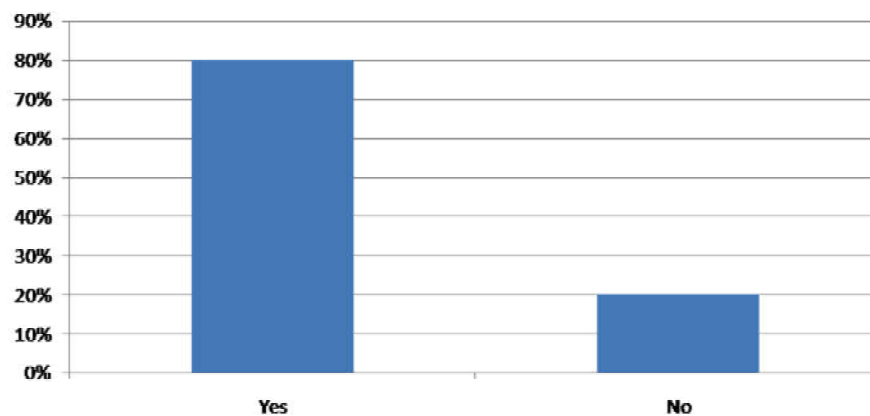


Source: Primary data

3.7. Factors Affecting Employees to Stay in the Organization: 52% of employees states that having a good boss is the main factor which makes them to retain within the organization; 36% of employees mentioned team work is the factor (figure 1).

3.8. Employee Workload: From figure 2, it is clear that 80% of employees workloads are distributed fairly and remaining 20% not.

Figure 2: Employee Workloads Distribution



Source: Primary data

3.9. Factors Encouraged by Management: Employee participation in Management, work life balance, better infrastructure amenities, recreation activities and interpersonal relationships are the factors encouraged by the Management and the response of employees are given in table 7.

Table 7: Factors Encouraged by the Management in Company

Factors	Percentage	Response	Total (%)
	Yes	No	
Participation in the Management	100	0	100
Work life balance	100	0	100
Infrastructure amenities	100	0	100
Recreation activities	90	10	100
Interpersonal relationships	100	0	100

Source: Primary data

3.10. Employees Opinion about Welfare Facilities: 76% of employees expressed that they are highly satisfied with the welfare facilities provided by the company, and 20% are satisfied (table 8).

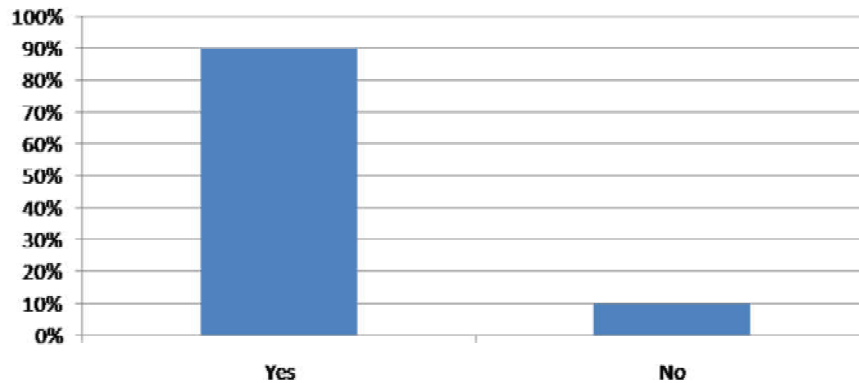
Table 8: Employees Opinion about Welfare Facilities Provided by the Company

Response	No. of Respondents	Percentage (%)
Highly Satisfied	38	76
Satisfied	10	20
Neutral	2	4
Total	50	100

Source: Primary data

3.11. Employees Response on Training Programs: Figure 3 shows that 90% of employees have agreed that the organization used to conducts training programs often whereas the remaining 10% of employees has stated that no training programs are conducted often to them in certain departments.

Figure 3: Employees Response on Training Programs



Source: Primary data

3.12. Employees Response on Any Barrier in Communication with Supervisor or Manager and Availability of Promotion Opportunities:

80% of employees' response is that there is availability of promotion opportunities. From table 9, it is very clear that 100% of employees have stated that there is no sort of barriers exists with communication while communicating with the supervisors and senior managers.

Table 9: Communication Barrier with Supervisor or Manager and Availability of Promotion Opportunities

Attributes	Percentage		Response	Total (%)
	Yes	No		
Communication barrier with supervisor or manager	100	0		100
Availability of promotion opportunities	80	20		100

Source: Primary data

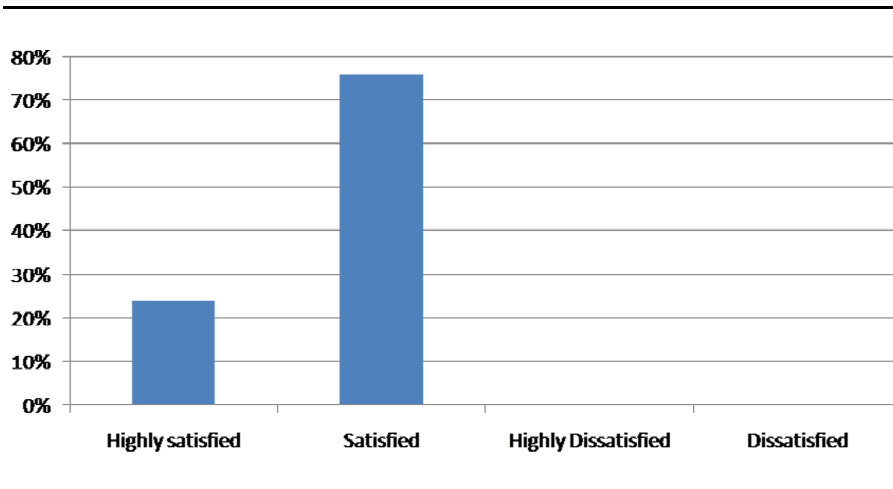
3.13. Motivated Factors to Employees: From table 10, 50% of employees are mainly motivated by the great working environment present in the company and 26% of employees have said that recognition is the main source of motivation; 14% of employees have responded that they are motivated by rewards.

Table 10: Employees Motivated Factors

Response	No. of Respondents	Percentage (%)
Native of Job	3	6
Recognition	13	26
Salary	2	4
Rewards	7	14
Working environment	25	50
Total	50	100

Source: Primary data

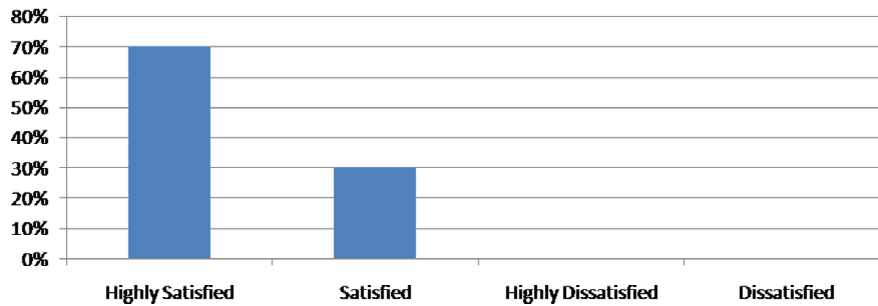
Figure 4: Employees Opinion about Company Policy



Source: Primary data

3.14. Employees Opinion about Company Policy and Opportunities and Career Growth Provided: 24% of employees have expressed that they are highly satisfied with the company policies and remaining 76% of employees are satisfied (figure 4). 70% of employees are highly satisfied with opportunities and career growth provided and remaining 30% are satisfied (figure 5).

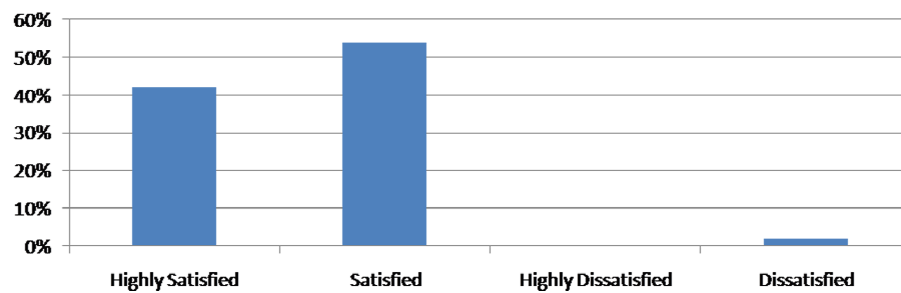
Figure 5: Employees Opinion about Opportunities and Career Growth Provided by the Company



Source: Primary data

3. 15. Employees' Opinion about Rate of Appraisal System: From table 6, it is mentioned that 42% of employees are highly satisfied with the appraisal system, 54% are satisfied and remaining 4% are dissatisfied.

Figure 6: Employees Opinion about Rate of Appraisal System



Source: Primary data

4. Conclusion

Managing the talents is a great challenge and to retain the best employees, framing of policies and practices is highly essential. At this juncture, it is necessary that strategies must be aligned with HR practices (that is recruitment and selection, training and Development, Performance appraisal and compensation); any retention strategies without aligning these practices would definitely be ineffective. It is evidenced that organizations are framing various policies and strategies to retain the talents. To avoid poaching of employees, to compete with its competitors and to survive in dynamic environment, organization have to concentrate on the factors on staying for enhancing satisfaction and commitment to retain the talented workforce. However, a number of companies fail to understand that there are many other factors which can help them in order to satisfy their employees. If recognized and implemented them correctly, they can retain their employees back. It is really appreciable that Abreco Freight Pvt Ltd is the perfect organization that any employee dreams off, it has strategically aligned the retention programs of employees and maintains good relationship and it works on employee oriented theories. Overall, it is an honest endeavour to understand the various factors that influence the employees of the organization, their priorities in terms of the influence and how the employees can be retained back in the organization.

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Health Care Equity: An Analysis of Ayushman Bharat: A National Health Protection Scheme in India

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Abstract: *Purpose: The aim of the study is to assess how Ayushman Bharat's introduction aims to realize the vision of healthcare coverage for the socially and economically disadvantaged and assess the program based on the assistance it provides to individuals.*

Design/methodology/approach: The study aims to analyze Ayushman Bharat's Health and Wellness Centers (HWC) and Pradhan Mantri Jan Arogya Yojana (PM-JAY) programs in light of their difficulties, drawbacks, and effects on different states. As a result, the study adopts a case study methodology

Findings: Ayushman Bharat (AB-HWCs and ABPMJAY) can accomplish its core goals of providing comprehensive coverage to the vulnerable population and lowering catastrophic healthcare costs, according to a closer examination of the implementation of the initiatives and performance over the past year. The current state of public health services, the imbalanced healthcare infrastructure in metropolitan areas, the limited involvement of the private sector, and the ability of the initiative to quickly adapt to new and developing restrictions, however, may limit the reach and results of the initiative.

Originality: Since health risks are among the biggest threats to poor people's capacity to support themselves, achieving health equity is essential to the battle against poverty. By analyzing an innovative healthcare funding model to enable health equity from a developing country, India, the study brings value.

Key Words: *Health Care Equity, Health Security, Ayushman Bharat, Quality Medical Care.*

Introduction

The security of one's health is crucial to development, and the well-being of the poor is particularly critical for the fight against poverty. Health security is viewed as a crucial component of general human development and the fight against poverty because health risk is one of the most significant risks

to poor people's ability to support themselves (Innes et al., 2022; Osterholm, 2017; Bordier et al., 2020; Jutting, 2004). Governments all across the world have been concerned with ensuring the health and welfare of their citizens. The cost of medical care for impoverished households increases when they encounter a health shock because, according to a World Health Organization (WHO) assessment, the government spends less than 40% on primary healthcare. Such unforeseen medical costs result in serious financial difficulties and long-term poverty (Xia & Yuan, 2022; Damme et al., 2004; Annear et al. 2006).

Additionally, households frequently forgo treatment or choose low-quality care due to a lack of funds (Yang et al., 2020; Das et al., 2008), further impedes economic growth. Governments from all across the world are attempting to solve this problem in several ways. To address the issues, the majority of them have implemented micro health insurances (Hinjoy et al., 2020; Bordier et al., 2020; Escobar & Panopolou, 2003; Knaul & Frenk, 2005; Obermann, 2006; Liu & Rao, 2006; Wagstaff et al., 2003). Current research indicates that health insurance programs boost the quantity and quality of care sought while assisting households with their financial difficulties. However, there is little research on the unintentional impact of such insurance plans on health outcomes, and it is unevenly distributed between different insurance kinds, particularly in low-income nations. Not many studies in the literature take novel models and their effects into account. Therefore, this study aims to find and evaluate creative healthcare financing strategies from India. The study will also highlight unmet requirements, particularly affordability-related ones, and emphasize the necessity of stakeholder cooperation to enhance patient access and financial security. There is much potential for shared knowledge among policy makers and pertinent players to address issues in the healthcare sector.

Indian Background

India is a large nation with a sizable populace. Unquestionably, the Indian people need a sound healthcare system that is accessible and inexpensive. One of the biggest obstacles preventing India from reaching its potential is the state of general health at the moment. The journey towards a healthier country has only been partially completed, despite notable improvements in health indicators like life expectancy, infant mortality rate (IMR), and maternal mortality rate (MMR) as a result of increased access to healthcare services

nationwide, extensive health campaigns, sanitation drives, an increase in the number of government and private hospitals, improved immunization, growing literacy, and other health indicators. The Indian government has undertaken several measures to improve people's health.

In addition to introducing the essential vaccines, National Rural Health Mission (NRHM) has developed many programs to enhance infrastructural facilities, equipment availability, pharmaceutical availability, and human resource strength. This mission focuses on reducing infant mortality, improving maternal health, increasing immunization rates, raising dietary standards, and raising hygiene awareness. The initiatives' outcomes were quite positive, and many health indicators rose in the rural area. Additionally, India's first National Health Policy (NHP) was created in 1983 by Ministry of Health and Family Welfare (MOHFW) to ensure that all social and geographic groups had more equitable access to health care. This was done by strengthening the health system and increasing primary health sector spending. Even though Indian healthcare has changed over the past three decades, it is now at a very crucial point in achieving the three A's of healthcare: affordability, accessibility, and availability. Additionally, because of the high cost of complicated life-saving therapies, secondary and tertiary health care prices have remained high and out of reach for many sections of society (Bhattacharjee & Mohanty, 2022). The challenges faced by the health system in India are: disparity in health status across India, the high demand for healthcare services, low health spending, high out-of-pocket spending, a disease profile that is highly volatile, unimpressive health indicators, poorly maintained medical equipment, a labour shortage, and inadequate health infrastructure (Small et al., 2017; Health and Family Welfare Statistics in India 2019-20; Niti Aayog, 2019).

The government has continually addressed major issues deteriorating the healthcare system through its policies and structures. The existence of an efficient healthcare coverage system for a long time is one of the common elements across the high-performing States, claims the research (Niti Aayog, 2019). For instance, all-inclusive health insurance program of Kerala was introduced in 2008, and Andhra Pradesh's health insurance program (Aarogyasri) debuted in 2007. According to the Insurance Regulatory and Development Authority of India, 2018 report, 75% of the Indian population is covered by government-sponsored health insurance programs, covering

48.2% of the country's population. This demonstrates the government's resolve to increase access to healthcare, particularly in light of its goal of achieving universal health coverage (UHC) by 2030.

The Indian government has also launched several programmes to help economically weaker citizens access quality medical care. The introduction of Ayushman Bharat (2018), which covers all the primary, secondary, and tertiary care verticals of healthcare service delivery, is one such initiative to attain UHC. The program intends to increase the affordability, accessibility, and quality of care for the underprivileged and vulnerable population, as well as to guarantee ongoing care for all Indians.

Health and Wellness Centres (HWC) and Pradhan Mantri Jan Arogya Yojana are two aspects of Ayushman Bharat (PM-JAY). These HWCs are updated versions of older programs like Primary Health Centres and Sub Centres. While the Pradhan Mantri Jan Arogya Yojana (PMJAY) focuses on delivering secondary and tertiary care services to the impoverished sector of society, health and wellness centres (HWCs) strive to deliver a wide variety of services close to the community.

The PM-JAY is a health insurance program for the underprivileged that provides cashless and paperless access to services at impanelled hospitals. The Central and State Governments each contribute a portion of the cash for the program. Except for the North-Eastern, Himalayan, and Union Territories with the legislature, the central share to State share ratio for all States is 60:40. The ratio is 90:10 for the North-Eastern States and the Himalayan States. The centre pays the entire premium in the case of Union Territories without legislatures.

These two health programs—HWC and PM-JAY—are part of Ayushman Bharat, which aims to create a new India by the year 2022 and assure increased productivity, well-being, reduce pay loss and financial hardship, create jobs, and strengthen the healthcare industry. After the program is implemented, the Indian healthcare system will take a giant step closer to UHC. To realize the vision of UHC, periodic evaluation and remedial action are crucial. Therefore, the study's goal is to assess how Ayushman Bharat's introduction aims to realise the vision of healthcare coverage for the socially and economically disadvantaged and assess the program based on the assistance it provides to individuals.

Methodology

The study aims to analyze Ayushman Bharat's Health and Wellness Centers (HWC) and Pradhan Mantri Jan Arogya Yojana (PM-JAY) programs in light of their difficulties, drawbacks, and effects on different states. As a result, the study uses a case study methodology to analyse the scheme.

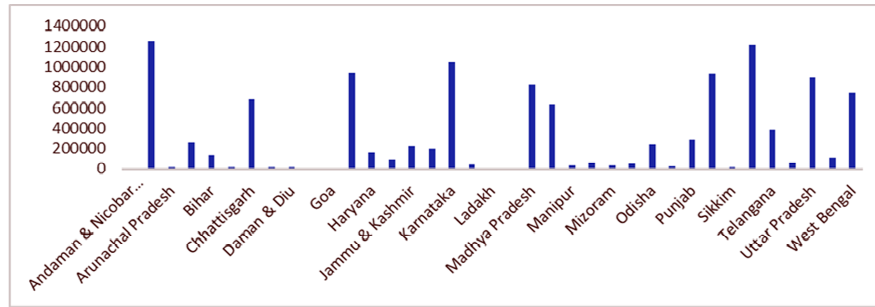
The Analysis of the Scheme: Ayushman Bharat

A lot has been accomplished, according to the study of the schemes. However, more work remains to be done in order to make both programs more cohesive, remove obstacles to seamless functioning, and eventually raise the quality of healthcare.

The government has partnered (Table 1) with various private and public organizations to ensure high-quality and prompt healthcare services. The scheme's current architecture calls for partnerships between the public and private sectors. By limiting long-term commitments and utilizing ultra-lean care delivery models, this cooperation shows how to keep future expenditures under control.

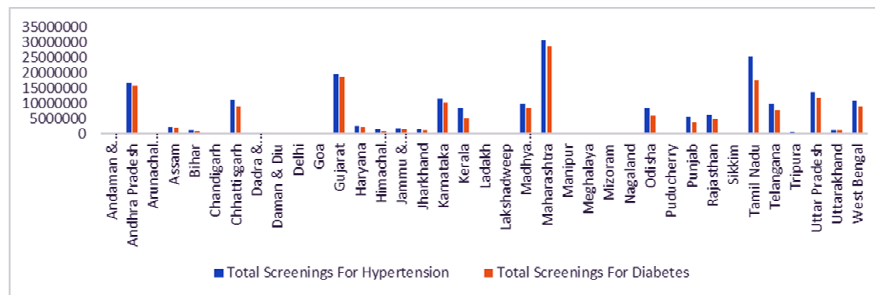
Ayushman Bharat's primary goals include improving the nation's overall healthcare system; as a result, attention must also be paid to more significant operational issues like providing high-quality, uniformed care, promoting quality accreditation, putting an emphasis on learning and capacity development, utilizing analytics and technology, and incorporating lessons learned from around the world. By concentrating on these overarching operational aspects, not only will the scheme be implemented more successfully, but the healthcare market will also be shaped, new market entrants will be encouraged, the regulatory framework will be reviewed, and new investment opportunities from cross-sectoral partners will be developed. The most wellness sessions, including yoga, were held in Andhra Pradesh (1258991), followed by Tamil Nadu (1221367), and the least were held in Delhi (21). Similarly, Maharashtra has completed the most tests for both diabetes and hypertension (30688913 and 28701082, respectively), followed by Gujarat (18700451) for diabetes and Tamil Nadu (25474873) for both conditions (figure 2). Maharashtra has completed the most oral, breast, and cervical cancer screenings (24912796, 10747620, and 8065033, respectively), followed by Gujarat (15973743, 7300448 and 6796232, respectively) (figure 3). Around 16 countries or partnership organisations are involved in the Ayushman Bharat Scheme (Table 1).

Figure 1: Number of Wellness Sessions Including Yoga Conducted



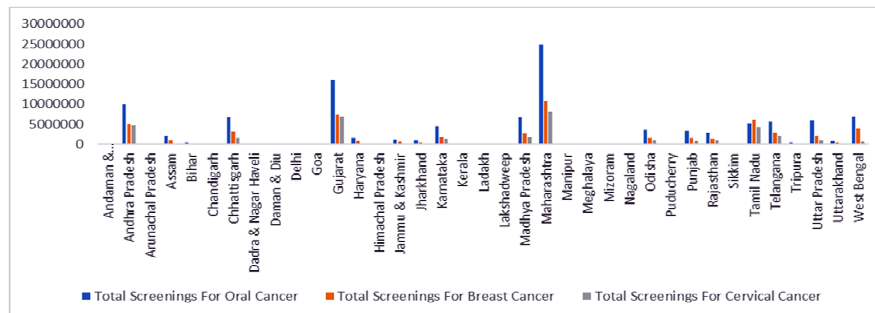
Source: <https://main.mohfw.gov.in/documents/reports>

Figure 2: Statewise Screening for Hypertension and Diabetes



Source: <https://main.mohfw.gov.in/documents/reports>

Figure 3: Number of Screenings for Different Types of Cancer



Source: <https://main.mohfw.gov.in/documents/reports>

Table 1: Partnership Organizations/Countries in Ayushman Bharat

S/N	Partnership organizations/ Countries in Ayushman Bharat
1	German Agency for International Cooperation (GIZ)
2	The World Bank,
3	World Health Organisation,
4	Bill and Melinda Gates Foundation,
5	Clinton Health
6	Access Initiative
7	National Skill Development
8	Corporation, ICICI Foundation for Inclusive Growth
9	Asian Development Bank, Akshaya Patra Foundation
10	Bharti Foundation
11	Novartis Social Business
12	NATHEALTH
13	WISH Foundation
14	Health Systems Transformational Program - Public Health Foundation of India
15	Insurance Institute of India, Department of Health Research - National Cancer Grid
16	Quality Council of India, International Innovation Corps -University of Chicago

Beneficiary identification, hospital network development, health benefits package introduction, development of standard treatment guidelines (STGs), awareness and empowerment programs, capacity building initiatives, provision for fraud prevention, detection, and control, engagement of service providers, hospital operations management, continuous monitoring and evaluation, response to Covid-19, and convergence of scheme are the major initiatives introduced under this scheme (Table 2). Table 2 lists the best practices followed for each endeavour. Aapke Dwar Ayushman, 625 STGs, working with State Health Agencies (SHA), quality certifications, quality dashboards, and other instances are a few examples.

Table 2: Key Initiatives and Best Practices Under Ayushman Bharat

Key Initiatives	Best Practices
Beneficiary Identification	<ul style="list-style-type: none"> ➤ Mission mode campaign “Aapke Dwar Ayushman”. ➤ MoUs with leading service providers such as CSC e-Governance Services Ltd. and UTIITSL Ltd. to ensure free issuance of cards to (SECC 2011) beneficiaries ➤ Collaboration with State Health Agencies to establish a grassroots network of Health Care Workers (HCWs) and Front-Line Workers (FLWs) to mobilize beneficiaries. ➤ Convergence with Panchayati Raj institutions by enlisting them to mobilize beneficiaries.
Creation of Hospital Network	<ul style="list-style-type: none"> ➤ Supply of health care services- pre-selected, well equipped, and well-prepared hospitals ➤ Distribution - optimal accessibility ➤ Quality standards and criteria for selection <ul style="list-style-type: none"> ▪ General criteria – For hospitals that provide non specialised general medical and surgical care with or without intensive care unit (ICU) and emergency services. ▪ Unique Criteria (for clinical specialties) – A specific set of criteria has been identified for each specialty. ▪ Monthly Quality Audit Checklist ▪ AB-PMJAY Quality Certification ▪ AB-PMJAY Quality dashboard ➤ Empanelment of hospitals under Central government ministries ➤ Direct empanelment for private hospitals ➤ Revision of empanelment policy
Health Benefit Packages	<ul style="list-style-type: none"> ➤ Treatment packages containing various procedures (cross-specialty, add-on, stand-alone, follow-up, stratifications, etc.), expanding access to various treatments, and a scientific integration of implants and high-end consumables within the packages., ➤ Reimbursement based on specified package rates

Standard Treatment Guidelines (STGs)	<ul style="list-style-type: none">➤ A total of 625 Standard Treatment Guidelines (STGs)➤ Pre-authorising Panel Doctor (PPD) and Claims Panel Doctor (CPD)➤ Third-party administrators (TPAs), insurance companies, SHAs
Beneficiary Awareness and Empowerment	<ul style="list-style-type: none">➤ Various modes of communication such as leaflets, booklets, hoardings, TV, radio spots, interpersonal communication, etc.,➤ Arogya Manthan to celebrate the launch day of the AB-PMJAY scheme➤ Diwali Campaign - #Gift of Health➤ Launch of Ayushman Bharat - PMJAY Sehat➤ Social media campaign on Ayushman CAPF initiative➤ Collaboration with State Bank of India (SBI) - AB-PMJAY ATM screensaver was deployed at more than 38,000 ATM sites across the country➤ AB-PMJAY digital banner advertisement has been deployed on SBI's YONO app➤ Kumbh Mela-activities like hot-air balloons, pole kiosks, press campaigns, electronic media campaigns, newspaper advertisements➤ Arogya Dhara 2.0➤ Adhikar Patra to make them aware of the rights➤ Abhinandan Patra and a feedback form - thank you note➤ Ayushman Mitra-helping eligible people to get their Ayushman➤ Cards created➤ 'Arogya Samvad' Newsletter to communicate the progress and updates
Capacity Building	<ul style="list-style-type: none">➤ Setting up sustainable institutional structures,➤ Building and strengthening the human resource and institutional capacity➤ Sustaining knowledge and skill through knowledge management and the use of appropriate tools.

	<ul style="list-style-type: none"> ➤ SHA capacity gap analysis ➤ Promotion of Cascade Model of Training through Training of Trainers
	<ul style="list-style-type: none"> ➤ Joint Certification Programme (Claim Adjudication, Medical Audit, and Field Investigation) with I.I.I supported by World Bank for the stakeholders involved in the claim processes of AB-PMJAY ➤ “BODHI” for internal skilling of National Health Authority (NHA) divisions
Fraud Prevention, Detection, and Control	<ul style="list-style-type: none"> ➤ Zero tolerance approach toward any fraud, ➤ An anti-fraud framework based on Prevention, Detection, and Deterrence. ➤ Advanced Analytics and Forensics ➤ Joint Medical Audits ➤ Use of Advanced Data Analytics Leveraging Machine Learning/Artificial Intelligence ➤ Advisories and Manuals ➤ Monitoring Tool RADAR (Risk Assessment, Detection, and Analytical Reporting) ➤ Action against errant entities
Service Provider Engagement	<ul style="list-style-type: none"> ➤ A robust real-time Management Information System (MIS). ➤ IMPACT Portal - a comprehensive portal displaying information related to infrastructure and human resources availability at State and District levels along with various operational dashboards ➤ Twenty-three separate need-based dashboards ➤ Improved Claim Settlement Turnaround Time ➤ Claim Adjudication Audit (CAA) ➤ Auto-Adjudication POC ➤ New IT enhancements (New query and rejection template) ➤ Empanelment of agency for Providing Human Resources ➤ Insurance pilot for covering Missing Middle/Non-Poor Population ➤ Automation of the payment process

Hospital Operations	➤ Electronic engagement, regular video conferences webinars, field visits, and direct calling
Monitoring and Evaluation	➤ Real-time dashboards to continuously keep track of coverage, benefits and financial protection aspects of the scheme ➤ Regular policy briefs based on utilization and data triangulation with state specific disease patterns
Beneficiary Empowerment	➤ Call Centre Operations AB-PMJAY Helpline ➤ Grievance redressal ➤ Quality audit of closed grievances
COVID-19 Response	➤ Free of cost access to private facilities for the scheme beneficiaries ➤ New packages for Covid -19 for the scheme beneficiaries. ➤ Direct Lab Empanelment for the scheme beneficiaries. ➤ Hospital Empanelment Module (HEM) Lite to overcome the delay due to lockdown. ➤ Call Centre support
Scheme Convergence	➤ Converge Ayushman Bharat with various national schemes to allow various ministries ➤ Reduced cost and standardized quality service ➤ Optimized & de-duplicated beneficiary

The subsequent sessions analyse the pillars separately to get a broader understanding of the challenges and the consequences within each pillar.

Health and Wellness Centres (HWCs)

HWCS, Ayushman Bharat's initial pillar, aims to provide Comprehensive Primary Healthcare (CPHC). As of March 31, 2022, the Government of

India had created 117440 HWCs under this project, surpassing the goal of 110000 HWCs by that date (annual report MOHFW, 2022). There are 34485 HSS with GEO coordinators as of May 31, 2022. (Annual report MOHFW, 2022). The Ayushman Bharat report (2022) states that Community Health Centres (CHCs) are working to address the unmet need for non-communicable and chronic diseases. The freedom to prioritize the gradual rollout of service packages depending on the local epidemiological environment and resources has been granted to States and Union Territories (UT). The CHCs require qualified personnel, medications and supplies, well-maintained medical equipment, and most importantly, public trust in order to deliver the enhanced services.

Additionally, public health requires a lengthy procedure for authorising new roles, hiring new employees, and onboarding them. This calls for a streamlined, time-bound plan to fill both open and new positions (Ayushman Bharat Report 2022; KPMG Report 2020). Even though the government is looking at partnerships to do this, carrying out major and minor repairs to put the plan into action would be a mammoth effort given the diverse topography and existing State of healthcare infrastructure among States. The primary healthcare system before implementing Ayushman Bharat-Health and Wellness Centres is compared and analysed in Table 3, along with the suggested plan and actual results. The following list includes some of the main difficulties. Even though money was set aside, the pace of implementation and the launch of service packages differ depending on the State/UT and are not consistent across the country. There is a considerable gap in the timely availability of sufficient drugs and supplies up to the final mile, which has a significant impact on the effectiveness and outcomes of HWCs. To promote transformation, there is a need for comprehensive skill development of the supply chain management (SCM) workforce, implementation of the SCMIT system, and reengineering SCM procedures in public health. It is also challenging to supply a significant number of HWCs with modern diagnostic equipment due to the disparate geographic conditions and health conditions in the various states. Not all State governments have specified the protocols as of yet just makes the problem worse.

Table 3: Comparison of primary healthcare systems before and after the implementation of Ayushman Bharat-Health and Wellness Centres

Before Ayushman Bharat	After Ayushman Bharat	Realty after Ayushman Bharat
Selective primary health care	Comprehensive primary health care	A budget was set aside to offer complete treatment. SHC, Primary healthcare centre (PHC), and UPHC each received funding for the facility upgrade. However, State/UTs have a significant influence on the speed of implementation and the rollout of service packages. Based on the resources and the local epidemiological environment, the implementation is done in phases.
Focused on men and women of reproductive age group-RCH oriented	Life cycle approach	Life cycle approach
Low drug availability at outlying centres results in high out-of-pocket costs.	Most peripheral centres now have more readily available medications, which has reduced out-of-pocket costs.	There are now more medications available at the outlying centres. To supply high-quality CPHC consistently throughout all States, a unified list for HWCs must be established, along with standardization of the national

Before Ayushman Bharat	After Ayushman Bharat	Realty after Ayushman Bharat
		and State level essential medicine lists. The success and results of HWCs will depend on how readily available medications are.
Limited follow-up at the community level	Medicines and diagnoses are available at HWCs, making it easy to follow up at the community level.	Severe delays in the timely delivery of sufficient medications and supplies up until the last mile. The SCM personnel must be heavily skilled up, the SCMIT system must be adopted, and SCM practices in public health must be reengineered in order to foster transformation. Considering the varied geographies and health conditions throughout the states, it is difficult to distribute new equipment to significant number of HWCs. At this time, not all state governments have specified the protocols.
The lack of staff in public health facilities is one of the critical causes of the underutilization of the extensive	HWCs provide comprehensive healthcare, lowering the financial burden on patients and the cost of transportation.	The public health system needs a qualified healthcare workforce as soon as possible to regain public confidence. Delivering quality services requires a substantial last-mile crew that must be trained.

Before Ayushman Bharat	After Ayushman Bharat	Realty after Ayushman Bharat
network of SHCs and PHCs (KPMG report, 2019).		
Limited Human Resources at Sub centres	A community health officer to lead the team and integrate the healthcare process.	Staff nurse positions are filled to a 60 percent level. In contrast to the requirement of at least two doctors, 60% of PHCs only have one physician. Most critically, 5% of PHCs do not have a single doctor on staff.
Limited focus on chronic disease prevention.	The risk factors for chronic illnesses and other ailments are a focus of HWCs.	
Because Sub Health Centres (SHC) and PHCs were unable to handle healthcare at the primary level, secondary level institutions were overloaded.	A robust HWC network would efficiently manage the patients at the primary level, lowering the secondary level overcrowding.	The ability to find qualified candidates to fill the position, the difficulty of training a large number of MHL/CHOs, and the system's adoption of a new cadre
There was no access to telehealth at peripheral centres	enhanced network and referral connections via teleplatforms. Telepathology and tele-	Getting HWCs to embrace these solutions and connect to the network is challenging. The adoption of the e-Aushadhi/SCM IT system is progressing

Before Ayushman Bharat	After Ayushman Bharat	Reality after Ayushman Bharat
	radiology adoption could make it possible for HWCs to offer more services.	in different ways across the States. The utilisation of the e-Aushadhi/SCM IT system is ineffective because of connectivity in remote places, a skilled workforce, and the maturity of the current SCM IT system.
Manual records lead to overburdened staff and data errors	A robust IT platform, standardized digital health records	Widespread capacity building is required for information and communication technology (ICT) literacy and training of a large number of workforces across new ICT systems/modules. Both the new and existing staff need hand-holding exercises.
Focus on the wellness component was limited	Wellness activities (including yoga) are mainstreamed	It is in progress

Discussion on HWCs

After comparing the primary healthcare systems in Kerala before and after the introduction of Ayushman Bharat-Health Centres, it can be concluded that regular maintenance of the physical infrastructure (following the upgrade) is necessary for the continuous delivery of services. In addition, consistent service delivery depends on routine maintenance of the physical infrastructure (after the update). Furthermore, the efficient running of wellness centres and

the purchase of telemedicine may be hampered by drawn-out and time-consuming public procurement and contracting processes. Implementing community-based outreach is more challenging in urban areas due to the diverse population makeup, varying health demands, and easy access to secondary level and private healthcare facilities. It will be essential to hire more last-mile workers, cooperate with both for-profit and non-profit partners, implement IEC successfully, and monitor various states to properly engage the community. In order to bring together the multiple healthcare programs from the MoHFW and non-healthcare programs from other ministries, an effective plan and implementation are required.

Analysis of Pradhan Mantri Jan Arogya Yojana (PMJAY)

Ayushman Bharat's second pillar, AB-PMJAY, was unveiled on September 23, 2018. The program aims to assist more than ten crore low-income and vulnerable families by covering secondary and tertiary hospitalization expenses up to INR 5 lakh per family per year (about 50 crore beneficiaries). Examples of centrally subsidized programs that have been incorporated under the AB-PMJAY are the Rashtriya Swasthya Bima Yojana (RSBY) and Senior Citizen Health Insurance Scheme (SCHIS).

The government spent 51.3% on primary care, 21.9% on secondary care, and 14% on tertiary care, according to the National Health Accounts for 2014–15. India's public health system lacks comprehensive healthcare services, especially secondary and tertiary care coverage. These treatments are widely available from private healthcare providers, resulting in high OOP expenses. By enhancing the public healthcare system and utilizing the high-quality services of private healthcare providers at various stages of care, the plan seeks to reduce catastrophic expenditures. After the program's launch, it was predicted that AB-PMJAY and other government-funded health policies would cover 17 crores (68%) of families. A thorough analysis of the plans reveals the difficulties or issues the plan encountered during implementation.

The Following are the main points:

- 1 Beneficiary coverage differs between rural and urban areas because eligibility is based on deprivation categories in the former, while occupational considerations are taken into account in the latter.

- | Due to the lack of availability or incomplete seeding of beneficiary details, there are certain challenges with the approval of beneficiaries with low confidence/profile matching scores.
- | An in-depth study also reveals a lack of cooperation among those enrolled in the present state-owned health programs, which results in double counting or omission of beneficiaries.
- | There are problems with the e-card generation process resulting from inadequate or absent training. The coverage appears to be adequate and is more than twice as high as other state-owned health programs. However, if the qualified family's assigned Rs. 5 lakhs of coverage are consumed, there is no provision for coverage.
- | Although the centre supports the program, it is unclear exactly how the money will be distributed among the many categories.
- | Moreover, many SHAs have been unable to allocate and use the money properly for the urgently required IEC due to the requirement that information education and communications (IEC) is paid for out of a particular fund. It is also not obvious what the maximum and minimum budget allotments are for each subheading.
- | In total, 1,394 packages were created and covered by the program for launch purposes for up to one year. The updated health packages were created using the correct nomenclature. The duplicates have been eliminated.
- | Packages under the plan, pre-authorization is not required for about 750 treatments. Pre-authorization has been outlined in many states, though, for all treatments. While in the case of brownfield states, they employed their current pre-authorization standards in order to qualify the packages for the programme.
- | Additionally, there is no differentiation in price or grading for empanelled healthcare provider (EHCP)s based on their geographic location (tier 1 vs. tier 2 and 3), or the size of the hospital (big and small healthcare organizations) within the same territory.
- | There are numerous issues with the pricing structure used for packages. The approved list's minimum and maximum usage requirements must always be adhered to. It is also required to calculate the package price

divided across the numerous items, including the medications, supplies, and implants. Another concern with regard to pricing is the need to standardise and define an approved list of drugs, equipment, and implants in terms of minimum and maximum usage for high volume and tertiary care procedures, approved generic/branded drugs, and the calibre of such drugs, equipment, and supplies used by EHCP throughout India.

- | Concern exists as well regarding private hospitals' participation. Even though the system has more than 7000 private providers impanelled, Tier-1 cities like Gurugram (17), Mumbai (29), and Bengaluru (28) only have a tiny number of private healthcare providers (KPMG, 2020).
- | Effective quality, results, and practice monitoring is crucial, as are field quality, medical audits, and substantial analytics use.
- | According to KPMG (2020), 6 States and UTs have selected a hybrid strategy, 9 States and UTs have chosen an insurance mode, and 17 States and UTs have chosen a trust technique. While West Bengal, Delhi, Telangana, and Odisha are States/UTs that currently run State-owned health programmes, all three States, with the exception of Delhi, have not yet signed up to participate in AB-PMJAY.
- | As states struggle with the issue and the pay-out has not been launched properly, the NHA needs to establish and publicise suitable guidelines for incentive distribution across cadres.
- | Implementing Support Agency (ISA) with an L-1 financial quotation without a lower baseline was chosen because the majority of greenfield states used the trust method of implementation of the scheme and lacked the institutional capacity to engage in rigorous selection, negotiation, and contracting processes.
- | Because the majority of greenfield states adopted the trust mode of implementation of the scheme and lacked the institutional capacity to engage in rigorous selection, negotiation, and contracting processes, ISA with an L-1 financial quotation without a lower baseline was chosen.
- | Many States have insufficient workforce capacity or a delay in recruiting the staff to administrate and implement these schemes, which has resulted in States' dependency on NHA. Because of these reasons, States consider insurance organizations a blessing in terms of institutional assistance.

- | The beneficiary identification portal is easy to use and records the whole patient experience. States will eventually become the stewards of this platform. NHA is also utilising an open API approach to facilitate and give organised data to States for their internal uses. Ten states have used this thus far.
- | In order to implement the fraud management platform/analytics in the future and enable real-time fraud detection, NHA is working to improve their accuracy.
- | An enterprise IT suite is being developed to automate daily activities at NHA and SHA. Real-time interactive dashboards powered by data present a significant opportunity to improve monitoring and decision-making.
- | One of the efforts to create an efficient monitoring mechanism and analyse usage trends is using the RADAR (Risk Assessment, Detection, and Analytical Reporting) dashboard.
- | The higher portability for high-value claims reflects both the patients' preferences for seeking treatment at larger institutions in other regions as well as possible service shortfalls in several states.
- | The analysis reveals a lack of institutional capacity at the SHA level to hire and deploy the necessary competent personnel for the programme to function effectively, particularly for greenfield states.
- | IEC guidelines, templates, and procedures have not been fully implemented; thus, more funding and oversight will be needed to accomplish the desired goals.
- | The institutional ability to design and carry out IEC has been constrained at the state level.
- | Limited IEC activities have led to a lack of understanding of the program, the exploitation of beneficiaries, and the emergence of dishonest practices like charging for services. Lack of institutional ability at the SHA level to hire and deploy the necessary skilled personnel for the program to operate effectively, particularly in greenfield states.
- | It is better to have experts from the industry or tie up with reputed agencies to train the staff concerning industry practices, detection of fraud, process monitoring mechanisms, and evaluation.

Conclusion

Ayushman Bharat (AB-HWCs and ABPMJAY) can accomplish its core goals of providing comprehensive coverage to the vulnerable population and lowering catastrophic healthcare costs, according to a closer examination of the initiative's implementation and performance over the past year. The current state of public health services, the imbalanced healthcare infrastructure in metropolitan areas, the limited involvement of the private sector, and the initiative's ability to quickly adapt to new and developing restrictions, however, may limit the initiative's reach and results.

In order to address today's healthcare concerns, crucial decisions must be taken about the four pillars of healthcare: availability, cost, accessibility, and acceptability. The subsequent enablement will concentrate on making quality care and providers available across geographies, at current prices, within reach of rural and semi-urban patients, and acceptable to all stakeholders. The government has enabled comprehensive health coverage to the sizeable vulnerable population.

The concept is a significant step toward the UHC, but its implementation is crucial. The following list of prospective areas to strengthen the present implementation for better results is based on the current structure and on-the-ground execution of Ayushman Bharat.

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Reasons for Migration and Socio-Economic Status of Migrant Construction Workers in North India

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Abstract: *In a population of 20,000 migrant construction workers in selected strata in Gurgaon and New Delhi, 2670 samples were examined. The socio-economic status of migrant construction workers and various reasons for migration were investigated. An extensive number of village youngsters, including minors, were employed as migratory construction labourers, according to the exploratory research and case study. The leading causes of young migration to cities are poverty, a lack of employment opportunities, and the children's requirements in terms of health and education. Their exposure to government social programmes is insufficient, and their saving habits were found to be highly unbalanced.*

Key Words: *Migrant Construction Workers, Reasons for Migration, Socio-Economic Status, Saving Habits.*

Introduction

The infrastructure development of any nation is part of its economic growth. It includes the construction of roads and bridges and related construction works. In India, the construction sector is the largest employer of unorganized labour next to the agricultural sector (Laskar and Murty, 2004). There was a steady growth of construction works until 2000 and after that fast development in the construction field. The contribution of the construction sector in India to the GDP (Gross Domestic Product) at factor cost in 2006–07 was Rupees 1,965,550 million, registering an increase of 10.7% from the previous year, and the share of construction in GDP has increased from 6.1% in 2002–03 to 6.9% in 2006–07. Around 16 per cent of India's working population depends on building construction for its livelihood. Today, the Indian construction industry employs about 31 million people and creates assets worth over Rupees 200,000 million annually (Barnabas et al., 2009).

The current study was conducted in 2021 in Gurgaon, Haryana and Delhi among construction workers. Most of the workers migrated into construction jobs in dire need of livelihood. The current study highlights the socio-demographic profile of the workers, their socio-economic status and reasons for migration. Irrespective of ample welfare schemes for the workers, access to such schemes were limited for the working class.

Most construction workers migrated from adjoining states, such as Uttar Pradesh, Haryana, Madhya Pradesh, and Rajasthan, all within approximately 250-300 km of Delhi. Sixty percent originated from the states of Rajasthan and Uttar Pradesh and around six percent migrated from distant tribal areas of Chhattisgarh. The construction workers tend to be seasonal migrants, travelling only when work is available in Delhi; during harvesting, they return to their villages. A significant proportion has stayed in Delhi for less than one year, and the others have moved from one work site to another within Delhi. When contractors recruit several people from the same village to work on a construction site, it creates a sense of community and security at the workplace.

Despite their involvement in the construction sector, where there is the excessive flouting of labour laws and rhetoric with respect to wages, working conditions, and hours, not a single migrant worker in this study was part of a union. Although migrant construction workers are scattered all over the city, an organizational initiative for union participation is lacking, partly because the work crews consist of migrants from different regions and communities. The seasonal nature of their jobs, fear of job loss, and contractors' victimization further complicate the situation and discourage labour organizing.

According to Munni, a 42-year-old migrant male from Uttar Pradesh, 'the contractors take advantage of us and try to exploit us. We, construction workers, assemble on the "nakas" i.e., street corners, in search of work from the contractors. 'We are ill-treated because we do not have any identity and nobody listens to us. We often do not get work for more than 15 days a month. We also cannot bargain about our wages as other labourers are willing to work for lower wages'.

Living conditions among Delhi's Migrant construction worker's low levels of earning act as a hindrance to migrants seeking improved living standards. Visiting the construction sites and workers' makeshift houses, the researchers

gathered a general perception of migrants' living conditions. Construction workers live in some of the most deplorable conditions to be found in Delhi. They have no facilities to provide safe drinking water, and the sanitary conditions, in general, are despicable. Despite the Contract Labour Act stipulating that a contractor or employer must provide suitable accommodations to the labourers, dehumanizing living conditions remain typical among the construction migrants.

A study conducted by Nithin et al., (2010) in Karnataka shows that 92.5 % out of 14 lakh workers have been deprived of the benefits of the welfare scheme promoted by the Building and Other Construction Workers' Welfare Board, Karnataka. Among the 189 respondents to the survey, only 24% have been aware of the welfare scheme. The major hurdles in extending the Scheme in the form of Legislation non-compliances have been recommended (Nithin et al., 2010).

The construction industry has been broadly classified into-Building works (involving projects like houses, offices, schools, factories, shops, hospitals, power plants, stations etc.), and Civil engineering works, (involving projects like roads, tunnels, bridges, dams, canals, docks etc) (Nithin et al, 2010). It requires personnel of different cadres, from unskilled, semi-skilled and skilled labourers to technical and management personnel, including contractors. The contractors are responsible for the day-to-day oversight at the construction site providing all of the material, labour, services and equipment (engineering vehicles and tools) necessary for the project. The contractors are classified (NFT Construction, 2010) into:

1. Building contractors build residential, industrial, commercial and other buildings.
2. Heavy/civil contractors build sewers, roads, dams, bridges, tunnels, etc.
3. Special trade contractors are engaged in specialized work like carpentry, painting, plumbing, electrical work, etc.

Construction workers work predominantly on construction sites and are typically engaged in the regular aspects of the industry other than design and financing. They are comprised of both local and migrant workforce. The worker's segment includes the daily wage labour and members of specialist trade such as electricians, carpenters and plumbers (Jennifer et al, 2010]. Due to low wages, the poor socio-economic condition was very common

among the construction workers, leading to severe stress and anxiety and making them addicted (Tiwari et al., 2011, Biswas et al., 2012).

The above studies depict the poor socio-economic status of construction workers. The current study conducted recently also explored the exploiting situation in the construction labour market as regards employment of migrant workers concerned.

Methodology

The study has used a mixed methodology with a descriptive research design to collect quantitative data and a case study method for pooling qualitative information. The objective analysis of both is given and discussed following suggestions for future studies and areas of intervention to improve the current status of migrant construction labourers.

Data Analysis

The sample consists of 2670 respondents from Delhi and Haryana. There are 2081 (76.94%) from Gurgaon, 334 (12.51%) from north Delhi and 255 (9.55%) from South Delhi. The women's representation in the migration group is only 6.59%.

Table 1: Age Distribution

Age Group	Frequency	Percentage
(10-24) yrs	868	32.51%
(19-24) yrs	2	0.07%
(25-34) yrs	1064	39.85%
(35-44) yrs	420	15.73%
(35-44) yrs	72	2.70%
(45-54) yrs	182	6.82%
(45-54) yrs	9	0.34%
(55-64) yrs	43	1.61%
(55-64) yrs	2	0.07%
65 and above yrs	8	0.30%
Grand Total	2670	

Source: Derived from the data collected.

The majority (39.85%) of the respondents are from the age group (25-34) years, followed by (32.51%) from the (10-24) years group. Considering these age groups, more than 70% of the workers belong to the age group of 34 and below.

It also highlights the dire need for employment and the hike in migration, particularly to the construction field from different rural districts in India.

Table 2: Distribution of Occupation

Occupation	Frequency	%
Any daily wage labour work	251	9.40%
Any other	42	1.57%
Civil Defence	1	0.04%
Construction work	2264	84.79%
Domestic work	21	0.79%
Labour	1	0.04%
Not applicable	2	0.07%
Rag picking	1	0.04%
Self Employed	84	3.15%
Shuttering Labour	1	0.04%
Tri cycle/e-rickshaw	2	0.07%
Grand Total	2670	100.00%

Source: Derived from the data collected.

The occupation of the majority of the migrants is construction work (84.79%), considering the entire study group. As the study focused on the construction industry, most participants fall under that category.

Table 3: Distribution of Educational Background

Educational Background	Frequency	%
Any other	190	7.12%
Graduate	81	3.03%
Intermediate	203	7.60%
Matriculation (IX-X)	444	16.63%
Middle School (V-VIII)	463	17.34%
Never had any formal education	850	31.84%
Primary level (I-V)	437	16.37%
Vocational Training	2	0.07%
Grand Total	2670	100.00%

Source: Derived from the data collected.

Of the 2670 respondents, 31.84% never had formal education, 16.63% had matriculation, and 17.34 % had passed the middle school. Only 3.03% were graduates. Lack of education is thus one of the facts that push them into migration in search of daily jobs. Most of the construction industry labourers do not require formal training except those skilled craftsmen.

Table 4: Reasons for Migrating

Reason for Migrating	Frequency	%
Family	1	0.04%
For Job	292	10.94%
For Surviving	1	0.04%
friends	223	8.35%
low salary	1	0.04%
No job in the native area	2147	80.41%
own decision	1	0.04%
poverty	1	0.04%
To earn money	2	0.07%
Wanted a change of place	1	0.04%
Grand Total	2670	100.00%

Source: Derived from the data collected.

The main reason for migration is the non-availability of a job in the native place (80.41%). When 10.94% migrated in search of any job, 8.35% got into the position on account of the influence of their friends. All other reasons, as found in the table above, were negligible.

Table 5: Bank A/C details

Bank A/C	Frequency	%
No	549	20.56%
Yes	2121	79.44%
Total	2670	100.00%

Source: Derived from the data collected.

Table 6: Mode of Savings Details

Mode of Savings	Frequency	%
Cash	1651	61.84%
No Savings	165	6.18%
Other	4	0.15%
Bank	850	31.84%
Grand Total	2670	100.00%

Source: Derived from the data collected.

The majority (79.44%) of the migrants have a bank account. However, 61.84% have their savings in cash, and only 31.84% have savings in the bank. Most of them prefer to keep money on hand and do not want to deposit it in the bank due to the difficulty of going to banks.

Table 7: Registration Under Any Government Welfare Scheme

Any other	1128	42.25%
AYUSHMAN BHARAT	1	0.04%
BOCW	7	0.26%
MGNREGA	11	0.41%
Not registered	1523	57.04%
Grand Total	2670	100.00%

Source: Derived from the data collected.

57% of the respondents have not registered under any government social welfare scheme. But 42.25% of the respondents joined other welfare schemes than those mentioned in the list.

Case Studies

Two case studies highlighted the socio-economic situation of migrant construction workers.

Mr. Bablu belongs to Uttar Pradesh, District-Sampal. He is 18 years old. He used to work in small grocery shops in his native place. He migrated to Gurugram because he and his family couldn't survive with his small salary. Bablu's mother is suffering from thyroid, and his father is suffering from MYCOBACTERIUM TUBERCULOSIS. His younger brother is also

working as a hawker, which is not so profitable. His younger sister is studying in a Govt. School. She is 12 years old. Due to his family problems, he has been working since age 10. Bablu is the only person on whom the whole family is dependent.

Mr. Gudda belongs to the Dhamoi district of Madhya Pradesh. He is 40 years old. Family Members include the wife and 3 Daughters. His mother is handicapped. Gudda migrated to Gurugram for labour work because, in his native place, he didn't have his own house; he used to change his location occasionally. Now the situation is such that his daughters are growing up, and on account of regular changes of residence, his daughter's education is in trouble. Currently, he is residing at a construction group's labour camp. He is also worried about the continuity of his job because once the construction work is over, he doesn't have a place to go until he gets another work.

Both the cases indicated the financial struggle of the families. The needs of the families for health and education make the socio-economic constraints all the more challenging. Conversations with construction workers revealed similar cases, and the strenuous socio-economic situation made them inevitable to get into any possible job irrespective of the likely chances of exploitation by intermediaries.

The case studies reflected the need to provide an eco-system of protection and adequate measures for legal welfare measures. Although there are several agencies, the access to their support is not often met due to ignorance and illiteracy of the workforce.

Discussion

The quantitative data showed the dire need of the rural unemployed youth seeking migration to find a suitable livelihood. The majority of them being in the age group below 34 again depicts the complex reality of unemployment among the youth. It is evident from the data about reasons for migration. Lack of adequate livelihood means for the natives are the pushing factors, and availability of job opportunities in the growing construction industry are the pulling factors that attract a large majority of the youth to get into construction works. The industry also requires sufficient labour force to meet its labour requirement.

The saving habit of migrant workers was comparatively irregular. Most of them keep cash on hand. Saving in the bank is limited because they do not get adequate time to visit banks, and lack knowledge about the procedures for easy transactions.

Conclusion

The reasons and socio-economic status of migrant construction workers in Gurgaon and Delhi need in-depth study to explore in detail. The sample size was large, and the results gave a better picture of the situation. The lack of job opportunities in Indian villages is a primary reason for migration. The off-season of agriculture saves them time to earn through migrant work. The study also showed the increasing number of village youth in the construction sector due to increasing unemployment among the village youth. The poor saving habit also gives adequate challenges to intervening with various issues emerging among the migrant construction workers in India.

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Social Anxiety as a Function of Shyness and Locus of Control

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Abstract: *In adolescence many children experience social anxiety in new social situations where they always try to avoid crowd. They always worry doing something they think is embarrassing such as blushing, sweating or appearing incompetent. They also find it difficult to do things when others are watching because they might feel they are being watched and judged all the time, fear of being criticized or have low self-esteem. Shyness is common which refers to feeling uncomfortable in social situations. If someone feels shy, still can motivate themselves to perform the work required. But someone with social anxiety can affect someone's quality of life. And locus of control refers to the extent to which individuals believe they can control events affecting them. This study was done to investigate how social anxiety correlates with shyness and locus of control among the adolescence. Comparative study was done and the results show that there is correlation between shyness and locus of control but no significant correlation between social anxiety and locus of control.*

Key Words: *Social Anxiety, Shyness and Locus of Control.*

Introduction

Social anxiety is a common type of anxiety disorder where there is an intense persistent fear of being watched and judged by others which can affect work, school and other daily activities. People in social situations have fear in social situations which is so intense that they feel it is beyond their control. For some people it may be in the way of going to work, attending school or doing everyday activities and other people may be able to accomplish these tasks but face anxiety when doing it. It is an unavoidable part of everyday life. Although worries about some of the situations are common in the general population but people with social anxiety worry excessively about them at the time, before and afterwards. There can be several factors which can increase the risk of social anxiety such as negative experiences where

children experience teasing, bullying, rejection or humiliation which may be more prone to social anxiety disorder. There might be other negative events in life such as family conflict, trauma or abuse which may be associated with it. Social anxiety typically starts in the teenage years but meeting someone new, giving a speech in public may trigger symptoms for the first time. Generally, children or people who are shy when facing new situations may be at greater risk. Social anxiety tends to run in families but it can't be completely said it is due to genetics. It might be due to learned behavior also because some people may develop significant anxiety after an unpleasant or embarrassing social situation. There are physical situations which sometimes accompany social anxiety such as blushing, fast heartbeat, trembling, sweating, nausea, dizziness, trouble catching our breath, feeling that our mind has gone blank. It also includes avoiding common situations such as interacting with strangers, attending social gatherings, starting conversations, eating in front of others, making eye contact, going to school or work, entering a room in which people are already seated, returning items to a store.

Shyness can be a means of feeling uncomfortable, nervous, insecure. It is an emotion that affects how a person feels and behave around others because they aren't sure how to act, don't know how others will act or when attention is on them. Depending on the situation and the person these feelings can be mild, medium or strong. Before trying something new they often hesitate and prefer watching first then joining in a group or activity. Situations such as the first day of school, meeting someone new or speaking in front of a group for the first time. Sometimes being quiet and introverted is a sign that someone has a naturally shy personality. But that's not always the same because being quiet is not always the same as being shy. Many adolescents tend to be shy around adults. Few characteristics which lead to the emergence of shyness are self-consciousness negative self-preoccupation, low self-esteem and fear of judgement and rejection. Shy people believe that people are constantly judging them, they try to avoid new social opportunities which in turn prevents them from improving their social skills. Shyness is driven by both biological and environmental forces. Babies are born with different temperaments and those with an extremely sensitive temperament are more likely to go on to be shy. But supportive, sensitive parenting can stop against developing shyness or social anxiety. During adolescence shyness can raise because teens have to meet new situations from classes to

friendships to puberty. They fear of being embarrassed, rejected or fully known. Parents can encourage teens to think about their fears and help them cope with their behaviors and skills. Culture determines the functional significance of shyness in terms of its relations with adjustment. It is important to examine the mediating role of social processes such as evaluations and responses in peer interactions, in cultural influence on the developmental patterns of shyness.

Shyness can turn into social anxiety if someone avoid worry or analyze social interactions. If someone feels anxious about their shyness, they may develop negative thought patterns about inferiority or incompetence. When a person faces social anxiety or shyness they may go through frustration and discouragement.

Within psychology, locus of control is considered to be an important aspect of personality which was developed by Jullian Rotter in the 1950s. Locus of control refers to an individual's perception about the underlying main causes of events in his/her life. It's a concept that refers to how strongly people believe they have control over the situations and experiences that affect their lives. Generally, locus of control depends upon internal and external locus of control because no one doesn't have 100% both of it. Instead, most people lie somewhere between the internal and external locus of control. The characteristics of locus of control is the feeling of confidence in the face of challenges, tend to be physically healthier, reporting being happier and more independent, tends to be less influenced by the opinions of other people. And the characteristics of external locus of control includes blaming outside forces for their circumstances, frequently feeling hopeless or powerless in the face of difficult situations, not believing that they can change their situation through their own hard work.

The locus of control is related to personality orientation. Social psychologists have begun to study the majority locus of control in various cultures and the factors that influence it. It has been found that quiet often the people of any given culture look at fate or self-control in a generally collective manner. Like individualistic cultures it generally signifies an internal locus of control where they may be the masters of their own fate whereas collectivistic culture demonstrates an external locus of control. They accept that things are out of their hands and don't rely upon individual as a whole.

Shyness can turn into social anxiety if it causes someone to routinely avoid, worry or analyze social interactions. If someone feels anxious about their shyness, they may develop negative thought patterns (about inferiority or incompetence) which can rely upon internal or external locus of control.

Social anxiety is related to over estimating the negative aspects of social interactions and underestimating the positive aspects. One theory about social anxiety is that patterns of thoughts and beliefs play an important role in social anxiety and targeting these thoughts and beliefs can be a helpful way to treat it. According to the cognitive theory, individuals with social anxiety tend to overestimate the level of threat in social situations, underestimate their ability to handle social situations, expect negative outcomes from interactions. But, the theory of shyness concerns about disapproval and perceived deficits in interpersonal skills along with reduced self-esteem which are critical factors associated with shyness. Whereas the development of locus of control is described along with Rotter's social learning theory where future expectancies for specific or related events are strengthened through reinforcement are to be related to the extent to which they attribute outcomes to their own actions. Thus, attitudes, beliefs and expectancies associated with an individual's locus of control are suggested to develop, be reinforced and strengthen through their interactions with others, the environment, individual differences.

Review of Literature

Teenagers with social anxiety disorder tend to exhibit fear and anxiety when exposed to some of the social situations or performances. If the teenagers are at the center of attention, their anxiety is induced and sometimes they try to exit from the situations. People with social anxiety worry excessively before, during and after experiencing the situations because of the fear or worry that they might say or act something embarrassing or humiliating such as, looking anxious, disrupting normal life, looking incompetent, shaking, sweating and blushing. As a result, the performance of the individual declines. At school, social anxiety disorder impairs their learning and at home, the quality of life and social relationship is impacted negatively because of the disruption of normal life (Beidel et al, 2007)

Majority of the teenagers with social anxiety tend to misuse drugs and alcohol so as to alleviate depression and also reduce their anxiety. Due to

such misuses, they experience educational underachievement. Later, they might experience in being employed.

1. Social Anxiety

In a study of threatening faces and social anxiety by Soren Rislov Staugaard it was stated that a threatening facial expression is a potent social sign of hostility or dominance. During the past 20 years, photographs of threatening faces have been included as stimuli in studies with socially anxious participants, based on the hypothesis that a threatening face is most noticeable to people with fears of social interaction or negative evaluation. A threatening facial expression can be a sign of disapproval which might function as an anxiety-provoking cue in people for whom the approval might be very important. It has been suggested that angry faces are challenges to dominance contest (e.g., Ohman, 1986) which is also relevant socially anxious individuals, who view themselves as less dominant than others (Alden and Taylor, 2004), and will often interact with others in a submissive way.

Anxiety is a multifaceted response to threatening situations. It is characterized by cognitive apprehension, neurophysiological arousal, and a subjective experience of tension or nervousness. People may experience anxiety for a wide variety of reasons, but factor analyses of anxiety and fear inventories consistently obtain solutions that include a at least one category of “social” or “interpersonal” anxieties (e.g., Bates, 1971; Endler, Hunt and Rosenwein, 1962). Empirical studies dealing with social anxiety can be split into three general categories. First, many researchers have been interested in social anxiety as an interpersonal phenomenon in its own right. Everyone experiences social anxiety at least occasionally. When they do, people not only suffer from tension but behave in ways that often interfere with social interaction. When people are nervous, it might indicate of their inner arousal (e.g., trembling, fidgeting), avoidance of other people and disruption of other ongoing behaviors (e.g., disfluent speech, difficult concentration). As a result, anxiety is a liability in social relations, because people who are nervous may become less socially effective. Secondly while most research has been directed towards understanding social anxiety and its impact on interpersonal behavior, other researchers have been interested in social anxiety in the process of studying these phenomena. For example, the construct of social anxiety has been used in studies of topics such as evaluation, apprehension, impression

management, self-consciousness, self-efficacy, conformity. This research has demonstrated that feelings of social inadequacy and concerns about other's evaluations play a central role in many psychological phenomena (Jones, Cheek and Briggs, 1986; Leary, 1983d).

2. Shyness

Shyness is a specific social phenomenon which comes under the umbrella of social withdrawal (Rubin and Asendorpf, 1993b). In the empirical literature describing social competency deficits is one of the most discussed behavioral difficulties in childhood social withdrawal (Rubin and Asendorpf, 1993b). Social withdrawal is an aspect of several DSM-IV-TR (APA, 2000) disorders such as social phobia and avoidant personality disorder. The term social withdrawal has been used interchangeably with terms such as shyness, social isolation, sociometric neglect, social reticence and inhibition (Rubin and Asendorpf, 1993a). Within the context of social withdrawal, shyness is distinguished from other forms of peer separation because of its derivation from social evaluative apprehension (Rubin and Asendorpf, 1993b). Further more, shyness is differentiated from social disinterest due to shy children's desire and motivation to interact with others (Coplan et al. 2004).

Shyness more explicitly can be understood in the context of its relationship to the clinical diagnoses of social phobia and avoidant personality disorder. Rapee and Heimberg (1997) described a continuum of social evaluative fear that encompasses each of these problems. Shyness can be characterized as the low to middle range, social phobia as the middle to high range, and avoidant personality disorder as the high to extreme range of this social anxiety continuum. Those in support of the continuum hypotheses believe that these constructs share several features and are qualitatively different problems (Heiser, Turner, Beidel and Roberson-Nay, 2009).

3. Relation Between Social Anxiety and Shyness

Shyness represents the least clinical form of social anxiety and is not a formal DSM-IV-TR (APA, 2000) diagnosis. It shares many symptoms with social phobia and avoidant personality disorder. It has been estimated that only 5 to 10% of the population consider themselves to never be shy and over 50% label them as shy people (Zimbardo and Henderson, 2000). Asendorpf (1990) described shy children as possessing the desire to interact with others, but inhibited by a persistent fear of negative outcomes. Shy

children experience anxiety in social situations, particularly when they feel themselves holding back of social or interpersonal behavior stemming from fear of interpersonal evaluation (Leary, 1986). Shyness affects children cognitively (i.e., increased cortisol levels in new situations), and behaviorally (i.e., avoidance of eye contact) (Cheek and Melchior, 1990).

4. Locus of Control

In a study of locus of control and academic achievement by Maureen J Findley, Harris M Cooper, it revealed that more internal beliefs are associated with greater academic achievement where the characteristics of the participants, nature of the locus of control and academic achievement measures were taken as mediators of the relation. The relation was more substantial among males than among females. Stronger effects were associated with specific LOC measures and standardized achievement or intelligence tests than with teacher grades (Psyc. INFO Database Record © 2016 APA, all rights reserved).

5. Relation Between Social Anxiety and Locus of Control

In a study of the interrelationship of social anxiety with anxiety, locus of control, depression ways of coping and ego strength by Robin-Marie Shepherd, Robert J Edelman among university students investigated that there were high scores in social anxiety which were related to high scores on measures of anxiety and depression, external locus of control. While the results are relational rather than being predictive of casualty. Research suggests that there has been an increase in the use of mental health services amongst university students.

In a study where the relationships between negative events, locus of control, social support and psychological adjustment in early adolescent sample was examined were the potential stress-buffering effects of social support and the conjunctive effects of social support and locus of control were upon adjustment. Family support was positively related to adjustment in several domains whereas school support was only related to school competence. After examining the buffering hypothesis suggested that both family and school served to moderate the relationship between negative events and school competence.

Rationale

Teens with social anxiety have an excessive fear of social situations such as school, parties, activities and more. They may avoid social situations or have a fear of embarrassment. They might be worried about saying something because it might sound silly to others or blushing from nervousness due to which they might find this to be disruptive for their life, trying to harm relationships with friends and loved, even hampering careers. Avoiding such situations cannot help for a long term. Due to such situations, they feel extremely self-conscious and fear of being embarrassed, making mistakes or looking foolish which is a mark of shyness because extreme shyness can interfere with socializing. It can prevent someone from taking advantage of opportunities or trying new things. Feelings of shyness can be mild, medium or intense depending on the situation and person. Shy people can learn to manage their shyness so that it doesn't interfere with what they enjoy doing. They try warming up to new people and situations. They try to develop their friendliness and confidence. But some people can have extreme shyness which can be hard to conquer. When the shy feelings is too strong people prevent interaction, participating in class and socializing. It can also affect a person's self-confidence and self-esteem. Facing such situations, the locus of control can also influence how to respond the events that happened and motivates to take action because it not only can influence how to respond to the events that happen in our life but also motivates them to take actions. If they believe that they hold the key to their fate then they are more likely to change their situation when needed.

Hypothesis

1. Social anxiety and shyness will have a significant relationship.
2. Social anxiety and internal locus of control will have a significant relationship.
3. Social anxiety and external locus of control will have a significant relationship.

Sample

The sample consisted of 150 students from the adolescent group both males and females from the Auxilium Convent School, Siliguri, West Bengal.

Tools and Test

Liebowitz Social Anxiety Scale (LSAS), Shyness Scale (SS) and The Locus of Control Scale (LCS).

Research Design and Statistical Analyses

The study is a quantitative study. It is a correlational design to assess the association of shyness and locus of control on social anxiety and the influence of these factors in social anxiety. After reviewing descriptive statistics, statistical analyses were conducted on the data collected. To test the relation of shyness and locus of control on social anxiety, Pearson's Correlation was conducted.

Discussion of the Study

Hypothesis 1: To determine the relation between shyness and locus of control

After developing an initial research, it was found that it was an alternate hypothesis because there is a relationship between both the variables i.e. social anxiety and shyness. For the conduction of it 150 students as a sample was taken including both males and females. Based on the statistical test the null hypothesis is rejected at 0.01 (1%) level. The estimated Pearson's correlation between social anxiety and shyness is 0.233. Hence, the result supports the initial hypothesis.

Hypothesis 2: To determine the relation between social anxiety and internal locus of control

For the conduction of it 150 students as a sample was taken including both males and females but after examining it was found that 117 students came under internal locus of control. The estimated Pearson's correlation between social anxiety and internal locus of control is 0.029. Hence, both the variables don't correlate with each other as they aren't significant. As the population was less, might be for this it couldn't support to be significant.

Hypothesis 3: To determine the relation between social anxiety and external locus of control

To understand it 150 students were taken including both males and females but after conducting the test it found that 33 students came under external locus of control. The estimated Pearson's correlation between social anxiety and external locus of control is 0.334. Hence, both the variables don't correlate

with each other as they aren't significant. As the population was too less, comparatively in other hypothesis, due to which it couldn't help to be significant.

Implication of the Study

The social implication of this research was to study the relation between social anxiety and shyness; social anxiety and locus of control. As we can say that social anxiety is more than shyness because it is a fear that does not go away easily and can affect everyday activities, self-confidence, social life. Occasionally many people worry about social situations but a person with social anxiety feels overly worried from before, during and after it. And locus of control helps us to show how people strongly believe that they have control over the situations and experiences that can affect their lives. It depends upon how people are managing themselves whether internally or externally. If it is internal forces then they try to be more independent. They be better at resisting social pressure to obey because they feel responsible for their actions. So, as the social pressure comes within them, from there the anxiety arises within themselves because in everyday life they try to be more cautious and wants to be independent too. And if it is externally, they tend to be more easily persuaded, socially influenced. They do not think much about everything due to which it can lead to less anxiety issues.

Limitations of the Study

The findings of the study should be viewed within the context of its limitations. So, the limitations of the study were that the questionnaires that the participants received to fill was a self-report measure. The research analysis done was completely based on assuming that the participants might have answered in a socially acceptable manner too which might result in a bias manner in the research. Because there might be several issues among them as they might think that people will get to know about them and later might judge them too. Next, the strength of the sample could have been a bit more which could have helped to give better significance between social anxiety and locus of control.

Conclusion

In contrast to everyday nervousness some adolescents go through fear, anxiety, avoidance, feeling of being judged. It's a crucial stage of their life

where they go through many situations whether it be physiologically or psychologically. They need a proper guidance or support where they can share anything they think or want to tell. Some children who are socially anxious might feel socially awkward or feel shy about meeting someone new whereas others who do not feel anxious will be cool or feel casual about it. And when internal locus of control comes the anxiousness increases because the individuals perceive that they have control over their own actions, try to take their own decisions i.e., they try to be independent but when there is an external locus of control they try to blame others, do not analyze the situations so they will likely experience less anxiety.

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