

March 2024

Volume: 09, Issue: 01

NATIONAL JOURNAL OF RESEARCH IN MARKETING, FINANCE & HRM



ISSN: 2455-5398

National Journal of Research in Marketing, Finance & HRM

Chief Editor

Dr. Kishor N. Jagtap

Editor

Dr. Mahavir M. Shetiya

Dr. Sudam B. Shinde

Associate Editor

Dr. Swapnil A. Shah

Prof. Sachin S. Bidve

Prof. Amol D. Dhobale

© March 2024. All Rights Reserved

- ✚ No part of this publication may be reproduced or copied in any form by any means without prior written permission.
- ✚ All efforts are made to ensure that the published information is correct. The organization is not responsible for any errors caused due to oversight or otherwise.
- ✚ The views expressed by individual contributions in the journal are not necessarily endorsed by the management.

Subscriptions:

National Journal of Research in Marketing, Finance & HRM is available against subscription only.

Subscription rate for Individuals/ Institutions	
1 year	Rs. 1000/-
2 years	Rs. 1800/-
3 years	Rs. 2500/-
For International subscription	US \$ 40 per year

For subscriptions and related enquiries write to:

The Head,
Subscription
Cell

National Journal of Research in Marketing,
Finance & HRM, Pune – 410505.

+91-02133-272213/14

Email: njr.editor@gmail.com

Disclaimer: The views expressed in the journal are those of author(s) and not the publisher or the Editorial Board. The readers are informed, authors, editors or the publisher do not owe any responsibility for any damage or loss to any person for the result of any action taken on the basis of the work. © The articles/papers published in the journal are subject to copyright of the publisher. No part of the publication can be copied or reproduced without the permission of the publisher.

National Journal of Research in Marketing, Finance & HRM

Advisory Board

Dr. E. B. Khedkar

Vice – President,
Ajinkya D. Y. Patil University, Pune.

Dr. S. U. Gawade

Former Head – Research,
Sinhgad Institute of Management, Pune.

Dr. Parag Saraf

Director,
Global Institute of Management, Sangamner.

Dr. Yogesh Bhowte

SKNSSBM, Pune.

Dr. B. M. Londhe

Director,
Amrutvahini Institute of
Management & Business
Administration, Sangamner.

Dr. D. B. Bharati

Director,
Rajgad Institute of
Management, Pune.

Dr. A. A. Deshmukh

Director,
VIIT, Baramati, Pune.

Dr. Pandit Mali

Director,
Indira Institute of Management, Pune.

Dr. Yuvraj Nalwade

Research coordinator,
VIIT, Baramati Pune.

Dr. P. R. Tambe

Director, ATEs's
Technical Campus, Akole

Dr. Aftab Anwar Shaikh

Principal, Poona College of
Arts, Science & Commerce, Pune.

Dr. M. G. Mulla

Professor, Abeda Inamdar College of
Arts, Science & Commerce, Pune.

Dr. Preeti Kulkarni

Director,
DMIMCS, Nashik.

Dr. Rahul Khandelwal

Research coordinator, B.P.H.E. Society's
Institute of Management Studies, Career
Development and Research (IMS)

Dr. Subhash Jadhav

Director,
Dr. B.V.Hiray College of
Management and Research Centre Nashik.

Dr. H. M. Jare

Principal,
SBPM,
Pune.

Peer Review Team

Sr. No.	Name	Designation
1.	Dr. Walmik Sarvade	Pro – Vice Chancellor, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajingar-431005.
2.	Dr. S. S. Mahajan	Dean, Department of Commerce and Management, Shivaji University, Kolhapur – 416 004
3.	Dr. Syed Azzharuddin	Professor & HOD, Department of Commerce & Management, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajingar - 431005.
5.	Dr. Meenakshi Waikole	Principal, Arts, Science & P. O. Nahata Commerce College, Bhusawal, Jalgaon- 425 201
6.	Dr. Dilip Gotmare	Principal, Dr. Panjabrao Deshmukh College, Cotton Market, Nagpur.
7.	Dr. Ganesh T. Patil	Principal, Smt. V. N. Mahila College, Pusad, Dist.- Yavatmal, 445204
8.	Dr. D. M. Khandare	Professor, School of Commerce and Management Sciences, Swami Ramanand Teerth Marathwada University, Nanded - 431 606.
9.	Dr. M. R. Patil	Professor, D. M. S. College of Art, Commerce and Science, Mapusa, Goa 403507.

Peer Review Policy Statement:

Reviewers are matched to the paper according to their expertise or subject. Our panel of reviewer is constantly being updated. Reviewers then evaluate the manuscript on following aspects: a.

Originality or otherwise b. Methodology c. Follows appropriate guidelines given d. Results clearly presented with conclusions and findings and correct references. Reviewers not expected to correct or copyedit manuscripts. Language correction is a part of the editorial process.

INDEX

Sr. No.	Title & Author Name	Page No.
1.	EMPOWERING RURAL COMMUNITIES: LEVERAGING SOCIAL IMPACT ASSESSMENT FOR SUSTAINABLE DEVELOPMENT IN INDIA Dr. Rohan Prabhakar Dahivale, Mr. Tejas Rawal	6-12
2.	IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON THE MEDIA SECTOR: AN EXPLORATORY STUDY Dr. Arvind A. Dhond	13-35
3.	A STUDY & IMPLEMENTATION OF SAFETY MECHANISM IN THE ASSEMBLY PROCESS Mr. Ashok Keshav Karande, Dr. Rohan Dahivale	36-42
4.	CSR INITIATIVE MADE BY THE INDIAN COMPANY FOR ACHIEVE SUBSTANTIAL DEVELOPMENT GOAL Ms.Kalyani Rambhau Bhalerao, Dr. Kishor N. Jagtap	43-49
5.	A STUDY & IMPLEMENTATION OF SAFETY MECHANISM IN THE ASSEMBLY PROCESS Mr. Ashok Keshav Karande, Dr. Rohan P. Dahivale	50-57
6.	A STUDY ON HEALTH AND SAFETY ASPECTS FOR UNLOCKING POTENTIAL IN WORKPLACE- REVIEW OF LITERATURE: Prof. Rupa Rawal, Shrutika Shukla, Suhani Hyalij	58-63
7.	ROLE OF ANALYTICS AND MACHINE LEARNING IN VENDOR EVALUATION AND PROFITABILITY OF FOOD INDUSTRY FIRMS: A QUANTITATIVE INVESTIGATION Mr.Dnyaneshwar Hirachand Ghuge, Dr.Yogesh W Bhowte	64- 78
8.	A STUDY ON EMPLOYEE SAFETY AND WELFARE AND WELFARE MEASURES AT XPRO INDIA LTD, PUNE Mr.Dnyaneshwar Hirachand Ghuge, Dr.Yogesh W Bhowte	78-106

Empowering Rural Communities: Leveraging Social Impact Assessment for Sustainable Development in India

Dr. Rohan Prabhakar Dahivale (HoD)

Rajgad Institute of Management Research & Development

Mr. Tejas Rawal (Student)

Rajgad Institute of Management Research & Development

Abstract :

This paper focuses on the importance of Social Impact Assessment (SIA) which is one of the integral components of the rural development programs of India. It highlights the different components of the SIA like assessing the impact on the environment, human health, and the economy of the project, suggesting the necessary mitigation strategies, consulting, participating, and monitoring the project. SIA in rural development projects is indeed critical for long-term sustainability. This paper presents SIA as a lever that empowers informed decision-making, develops a communal attachment and tackles unwanted consequences to the weak and vulnerable groups. The objective, therefore, is to introduce SIA in program and project planning and management to not only promote participatory growth but also cater to the needs of society and uphold the cultural heritage.

Keywords: *Rural Development, Social Impact Assessment, Sustainable Development*

1] Social Impact assessment

SIA is a powerful tool for evaluating a project that has been proposed in an existing program, or a policy. It is a mechanism for identifying and assessing the impact of the different effects likely to occur (positive or negative) on the community. It is particularly important to work out the consequences for people, communities, and society as a whole from the proposed intervention, especially for specific vulnerable or marginalized groups.

Key aspects of SIA include:

- ✓ **Identification of Stakeholders:** Such actions include the establishment of a dialogue with local communities, indigenous peoples, workers, and other groups of participants who can be affected by the proposed policy or process.
- ✓ **Baseline Data Collection:** SIA has to ensure getting data about the unconscious social, economic, and cultural dynamics in the affected areas or populations. This

enables us to identify where the areas for improvement have occurred, necessary for comparison of the impact.

- ✓ **Impact Prediction:** To evaluate the impacts of the respective project or policy, SIA considers the possible positive and negative facets of society that comprise employment rates, income distribution, service availability, cultural practices, and competence of the community.
- ✓ **Mitigation Strategies:** According to the impact identified, it was found the SIA is providing areas to mitigate the negative and also enhance the positive stems. For example, the plans could be modified through alterations on design, implementation strategies, or compensation and resettlement measures adopted.
- ✓ **Consultation and Participation:** SIA focuses on community involvement and has highlight of communicating and engaging the identified stakeholders at each assessment stage. In this context, joint decision-making might involve public consultations, the arranging of workshops, and other means of interaction to make sure that stakeholder communication takes into consideration the concerns and the views of every interested party.
- ✓ **Monitoring and Evaluation:** SIA includes mechanisms for tracking the implementation of measures as well as measures that evaluate the effectivity of this over time. This is vital in an uncertain setting where the social effects involved are predicted and the possible unexpected reactions should be managed with immediacy.

SIA forms the key pillar of planning processes serving as an effective tool for assessing social considerations in sectors like urban as well as rural development, infrastructure projects, and natural resource extraction, and also policy-making processes to make sustainable and equitable outcomes.

2] Consulting SIA for Rural Development Programs

With this in mind, a social impact assessment (SIA) should unquestionably play a key role in ensuring that rural development programs in India. Here's how SIA can contribute to the betterment of rural development programs in India:

- **Understanding Local Context:** In SIA, the effectiveness of stakeholder engagement is considered through the rigorous approach of locals so that the communities can ensure that the community have the power in decision-making. Consequently, rural development programs can be equipped with the necessary knowledge to design their

interventions by profiling the challenges and opportunities in each of these communities.

- **Identifying Potential Impacts:** SIA helps in finding out any social, economic, and environmental impacts that can lead to attention from the development programs implemented using local communities. These analyses should address potential impacts on job opportunities, use of goods and services, social unity, and cultural identity.
- **Inclusive Decision-Making:** The SIA program encourages unbiased decision-making by involving all the concerned bodies; such as women, indigenous communities, and poor economic households. This way, a diversity of viewpoints takes into account and addresses the problems of rural community people during designing and implementing rural development projects.
- **Mitigating Negative Impacts:** Rural development plans can take advantage of SIA to devise an impact assessment and mitigation of the harmful things that can be expected to result. The strategy may include steps like reducing the movement of people, protecting resources, and combating the negative effects of the issue.
- **Enhancing Positive Impacts:** In addition to this, SIA allows us to assess the difficulty of rural area development and to find ways to improve the situation. Another vital source of positive change is to encourage entrepreneurship at the local level, improve access to education and health infrastructure, and develop local communal institutions.
- **Building Capacity:** SIA may be used to elevate the capabilities of local community members to take part in and obtain from development schemes aimed at bettering their rural area. This fourth includes the contribution of training and support to the community people to ensure that they are involved actively in the decision-making process and take over the ownership of development initiatives.
- **Monitoring and Evaluation:** SIA comprises systems for supervising programmed actions for rural growth and analysing the consequences of such actions in the long run. This process has the effect of ensuring that the projects continue to be effective in their task and are creating an impact on rural communities.

Having SIA as a part of the planning and implementation process of development projects for the rural area can ensure that such programs would be more effective, lasting, and inclusive; as a result, the people who live in the countryside will benefit in the long term.

3] Implementing steps

The SIA for rural development programs going through a multi-step process is getting done to address the whole process but keeping it inclusive and effective too. Here are the key steps:

Scoping and Planning:

- Determine what the SIA means and what it covers.
- Name the primary stakeholders which are the local population, the government, the NGOs as well as other featured parties.
- Design a comprehensive work plan that will describe the components of the assessment such as the schedule, budget, research methods and tools to be used.

Baseline Data Collection:

- Conduct a baseline analysis of the human, economic, and natural components in the project area before initiating the project which will involve population, means of livelihood, cultural practices, space, and other infrastructure.
- Conducting surveys, interviews, focus group discussions, and participatory mapping to collect qualitative and quantitative data from communities at the local level is one of the approaches to be implemented.

Stakeholder Engagement:

- Promote full-fledged engagement of stakeholders as well as inclusive consensus building during the SIA process.
- Have community gatherings, seminars, and other activities to collect suggestions, comments, and feedback from community members.
- To this step, ensure that the involvement of heavily underprivileged groups including women, indigenous people, or poor families is kept at a maximum and supported intensively.

Impact Assessment:

- Compare and contrast the possible influences, such as social, economic, and environmental impacts, that may occur during the implementation of the rural development program through proper tools and methodologies.

- Evaluate the impact of the initiative on different dimensions of the community's well-being, including economic development, resource availability, social togetherness, and cultural changes.

Monitoring and Evaluation:

- Align the mechanism along with the performance assessment and evaluation of mitigation measures over a long period.
- Measure essential determinants (such as the well-being of people, their employment, and the quality of the environment) that can help you infer the program's long-term effects on the communities in rural areas.
- Request the views of key stakeholders on the operations of the program and make amendments where necessary to check for any unintended consequences or emerging issues and how to manage them.

Documentation and Reporting:

- Documenting each step of the SIA process is a crucial part of it - data collection, analysis, stakeholders' engagement, and the making of the decision.
- Develop coherent and easy-to-understand reports that are a brief overview of the findings of the SIA that include key recommendations on the organization structure and activities, management, and monitoring.
- Publish the outcome of this SIA to major stakeholders in a strategic partnership like government bodies, funding organizations, and local communities to bring out transparency and realization.

4] Examples : SIA has been used in real contexts to improve rural development programs in India:

- I. **Watershed Development Projects:** The watershed development programs target creating the requisite conditions for better water availability and higher agricultural output in the rural sector. Before the projects are undertaken, SIAs are a process that ensures a comprehension of the social impacts of a project like changes in land ownership, access to water, and livelihoods of local community people. This will ensure that the communities' needs and priorities are met without any susceptible group suffering any adverse effects.
- II. **Rural Infrastructure Development:** The implementation of rural infrastructure development projects, like road construction or electricity, sanitation, and other

numerous ones, are great social contributions to local communities. Involvement of affected communities and implementation of SIA recommendations in the planning of projects to infrastructure development programs can greatly help the achievement of rural development and inclusive growth.

- III. **Tribal Development Initiatives:** The indigenous community in India often suffers from specific social and economic disadvantages, being brought in by cultural diversity and historical discrimination. SIA carries out taking stock of the exact demands and the agenda of the community and understands whether or not the implemented developmental interventions will impact social lives, land rights, and heredity. Through the conduct of consultations with tribal communities and making SIA findings part of plans and program formulation, development initiatives are in a better position to not only register the dreams of tribal populations but also promote their social integration and evident empowerment.

By carefully examining the social aspect of implementing the policies of development, India will be able to accomplish the agenda of providing all population, i.e. rural, with equal chances of growth across the country.

Conclusion: SIA can achieve betterment by functionally testing the social, economic, and environmental consequences of development programs. The process allows stakeholders to assess community needs, make informed decisions, and evaluate consequences for vulnerable people groups. Local development projects are being made more inclusive by performance monitoring and evaluation activities with the assistance of various stakeholders. As a result, such initiatives take into consideration the goals and interests of the local population and contribute to their well-being. The above instances reinforce the ground-breaking prospects of the model to influence the trend of policy formation as well as promote social cohesion, especially among alienated population groups. Through this process of learning and decision-making, SIA will stand as one of the vital tools that may help India accomplish the goals of achieving equitable and inclusive rural development and the communities that live in it will become self-sufficient.

References :

1. Arvidson, M., & Lyon, F. (2014). *Social Impact measurement and non-profit organisations: compliance, resistance, and promotion*. *Voluntas*, 25(4), 869–886.
2. Bauer, R. A. (1966). *Social indicators*. M.I.T. Press.

3. *Becker, H. A. (2001). Social impact assessment. European Journal of Operational Research, 128(2), 311–321.*
4. *Brouwer, R., & Van Ek, R. (2004). Integrated ecological, economic and social impact assessment of alternative flood control policies in the Netherlands. Ecological Economics, 50(1–2), 1–21.*
5. *Costa, E., & Pesci, C. (2016). Social impact measurement: why do stakeholders matter? Sustainability Accounting Management and Policy Journal, 7(1), 99–124.*

Impact of Artificial Intelligence (AI) on the Media Sector: An Exploratory Study

Dr. Arvind A. Dhond

Professor, St. Xavier's College, Mumbai – 400 001.

arvinddhond@gmail.com

Abstract :

Artificial Intelligence (AI) has rapidly evolved in the past few decades and spread like a wildfire encompassing almost all the sectors across the globe. Like in other sectors, today the role of AI has dramatically expanded in the field of media and journalism sector too. AI is used for creation of headlines, data analysis of enormous amounts of textual data thus making available free time for the journalists to be used for more crucial tasks such as enhancement of news quality and creativity. AI has thus reduced the workload of the journalists in producing routine news reports. AI-powered analytics is also used to study user preferences and present tailored recommendations in which users only see information that supports their own interests and preferences. In the initial phases AI was seen as a tool to enhance efficiency and personalisation of news contents, but in the recent years privacy and ethical considerations has surfaced as a major concern. This study relies on analysis of empirical data gathered from 101 sample respondents gathered through a structured questionnaire during February to April months of the calendar year 2024. The paper offers an in-depth analysis of AI's impact on media, highlighting both the positive as well as the negative impacts concluding with the suggestions.

Keywords: *Artificial Intelligence, Algorithmic Bias, Media, Media Consumers, Privacy*

Introductin : The media industry is further sub-divided into a number of sub-industries like journalism, broadcasting, entertainment, and advertising. The evolution of AI in the media industry is one of the an example of advancement of technology. Advancement of AI technology has provided a boost to the media sector in the recent years. AI has an impact on content curation, content delivery, and workforce as well. The adoption of AI has brought both prospects and problems in the media sector. Apart from the resulting gains the algorithmic bias, privacy difficulties, and the displacement of human labour are significant ethical challenges that necessitate careful attention. The pros and cons of integrating AI in the media industry must be carefully considered and media organisations must take this into

account to devise strategies to maximise the gains and minimising the negative effects.

Review of Literature : This section employed a thorough review of literature to investigate how AI affects the media industry. The systematic review of literature approach offers a thorough and orderly analysis of the body of research, allowing the identification of key topics, trends, and research needs in the field.

Review from the Study of Manoj Govindaraj et al. : In the study entitled “Role of Artificial Intelligence Across Various Media Platforms: A Quantitative Investigation of Media Expert’s Opinion” by Manoj Govindaraj et al. published in the Journal of Law and Sustainable Development, Vol. 11 No. 5 (2023) whose main purpose is to know the factors that determine the role of AI and its impact across various media platforms. The study has considered 213 media experts (respondents) among which the survey was conducted to know the role and impact of AI across various media platforms. The results showed that all the factors namely Customer Management, Data Management and Marketing having significant impact on “overall impact of AI across various media platforms” except the factor “Control Information” showing insignificant but positive impact across various media platforms.

Review from the Study of Sylvia M. Chan-Olmsted : In the study entitled “A Review of Artificial Intelligence Adoptions in the Media Industry” by Sylvia M. Chan-Olmsted, Director of Media Consumer Research at the University of Florida, published in the International Journal on Media Management, Volume 21, 2019, Issue 3-4, it examines the utilities of AI in the media industry, AI’s role in the context of value chain, and the challenges in incorporating the cognitive technologies in this industry. The study concluded that AI applications in media have occurred in the eight main areas: Audience Content Recommendations/Discovery, Audience Engagement, Augmented Audience Experience, Message Optimisation, Content Management, Content Creation, Audience Insights, and Operational Automation. Further, it added that there are significant challenges in balancing the effectiveness and efficiency, and human and AI judgement.

Objectives of the Study :

The specific objectives of the present study are succinctly spelt out in the succeeding points:

1. To investigate whether Artificial Intelligence has improved efficiency and productivity in media production processes.
2. To analyse the role of Artificial Intelligence in enhancing user experiences and

personalised content consumption in the media sector.

3. To examine the potential threats and challenges posed by Artificial Intelligence, such as job displacement, algorithmic bias, and privacy concerns.

4. To explore the future outlook of the media sector in light of Artificial Intelligence adoption and to ensure responsible implementation of Artificial Intelligence.

Data Analysis and Interpretation : The primary data was collected with the help of a structured questionnaire administered among the sample respondents. The target number of respondents was a minimum of 100 whereas the actual study has considered 101 sample respondents which is more than the target number of the respondents. The analysis of the primary data collected from a total sample size of 101 respondents is as exhibited in the subsequent sections.

Analysis Of Demographic Data : In this study the analysis of demographic profile of the sample respondents is classified into sex composition, occupation, etc. as illustrated in the ensuing representations of the data analysis:

Sex-wise Classification of Respondents

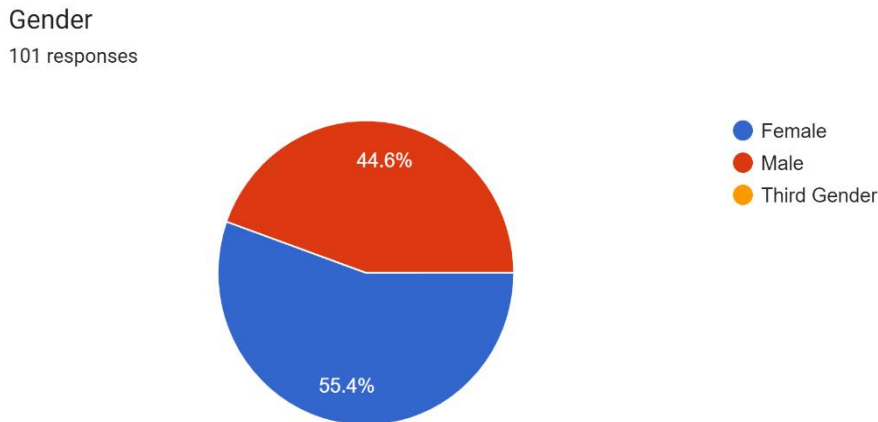
For the purpose of the study, the sample respondents are sub-grouped into male, female and third gender, the analysis of which is presented as follows:

Table 1.1: Sex-wise Classification of Respondents

Gender	Frequency	Percentage (%)
Female	56	55.40
Male	45	44.60
Third Gender	00	00.00
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 1.1 is exhibited in the Chart 1.1 as follows:

Chart 1.1: Diagrammatic Representation of Sex-wise Classification

Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 1.1 and Chart No. 1.1 depicts that, 55.40% (56 Respondents) are 'Female' and 44.60% (45 Respondents) are 'Male'. Hence the following responses are influenced by the responses from the 'Female' sample respondents.

2.2.2 Age-wise Classification of Respondents

For the purpose of the study, the sample respondents are sub-grouped into age categories, the analysis of which is presented as follows:

Table 1.2: Age-wise Classification of Respondents

Age Group (in years)	Frequency	Percentage (%)
18 – 25	54	53.50
26 – 35	07	06.90
36 – 45	17	16.80
46 – 55	09	08.90
56 – 65	11	10.90
Above 65	03	03.00
Total	101	100.00

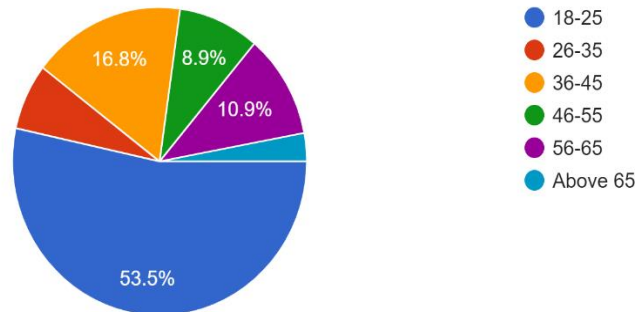
Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 1.2 is exhibited in the Chart 1.2 as follows:

Chart 1.2: Diagrammatic Representation of Age-wise Classification

Age Group (in years)

101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 1.2 and Chart No. 1.2 depicts that, 53.50% (54 Respondents) are from the age group of 18 – 25 years which is the of largest category of respondents.

2.2.3 Occupation-wise Classification of Respondents

For the purpose of the study, the sample respondents are sub-grouped into occupation-wise, the analysis of which is presented as follows:

Table 1.3: Occupation-wise Classification of Respondents

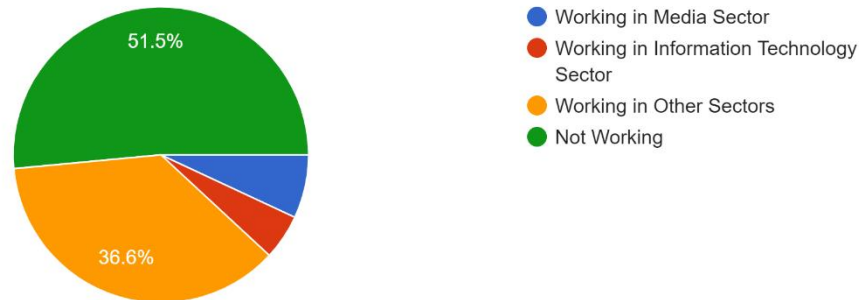
Parameter	Frequency	Percentage (%)
Working in Media Sector	07	06.90
Working in IT Sector	05	05.00
Working in Other Sectors	37	36.60
Not Working/ Media Consumers	52	51.50
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 1.3 is exhibited in the Chart 1.3 as follows:

Chart 1.3: Diagrammatic Representation of Occupation-wise Classification

Occupation
101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 1.3 and Chart No. 1.3 depicts that, 6.90% (7 Respondents) are working in Media Sector, 5% (5 Respondents) are working in IT sector, 36.60% (37 Respondents) are working in other than Media and IT Sectors, 51.50% (52 Respondents) are not working as they are currently pursuing their studies at the UG/PG level at the University level, but they are Media Consumers and their perspectives on the impact of AI on the media sector is most relevant.

2.2.4 Relevant Industry Experience of Respondents

For the purpose of the study, the sample respondents are sub-grouped into relevant industry-wise experience, the analysis of which is presented as follows:

Table 1.4: Relevant Industry Experience of Respondents

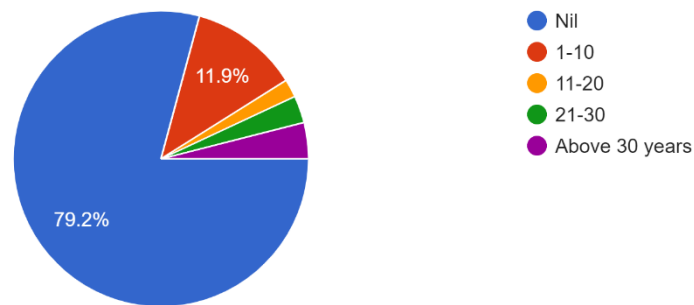
Industry Experience in IT or Media Sector (in years)	Frequency	Percentage (%)
Nil	80	79.20
1 – 10	12	11.90
11 – 20	02	02.00
21 – 30	03	03.00
Above 30	04	04.00
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 1.4 is exhibited in the Chart 1.4 as follows:

Chart 1.4: Diagrammatic Representation of Relevant Industry Experience

Industry Experience in IT or Media Sector (in years)
101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 1.4 and Chart No. 1.4 depicts relevant work experience in the media and/or IT sector reflecting that, 4% (4 Respondents) are having experience above 30 years, 3% (3 Respondents) are having experience above 20 years but upto 30 years, 2% (2 Respondents) are having experience above 10 years but upto 20 years, 11.90% (12 Respondents) are having experience upto 10 years, and 79.20% (80 Respondents) are having no experience in the media and/or IT sector.

2.3 Analysis of Core Survey Data

This section forms the main section for data analysis which comprises of the analysis for the core questions relating to the focused area of the study.

2.3.1 Familiarity with AI in the Media Sector

For the purpose of the study, the sample respondents' opinions are sought pertaining to their familiarity with AI in the media sector, the analysis of which is presented as follows:

Table 2.1: Familiarity with AI in the Media Sector

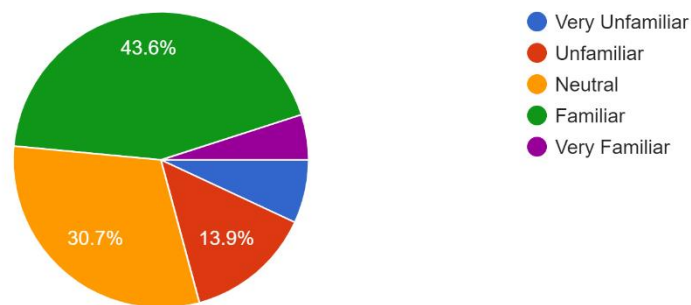
Parameter	Frequency	Percentage (%)
Very Unfamiliar	07	06.90
Unfamiliar	14	13.90
Neutral	31	30.70
Familiar	44	43.60
Very Familiar	05	05.00
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.1 is exhibited in the Chart 2.1 as follows:

Chart 2.1: Diagrammatic Representation of Familiarity with AI in the Media Sector

Familiarity with AI in the Media Sector
101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.1 and Chart No. 2.1 depicts that, 43.60% (44 Respondents) have expressed the opinion as 'Familiar' and 5% (5 Respondents) have expressed the opinion as 'Very Familiar'. Hence, 48.60% (49 Respondents) have expressed the opinion that they are familiar with AI in the media sector.

2.3.2 Positive Impact of AI on Content Creation and Personalisation

For the purpose of the study, the sample respondents' opinions are sought pertaining to the positive impact of AI on content creation and personalisation, the analysis of which is presented as follows:

Table 2.2: Positive Impact of AI on Content Creation and Personalisation

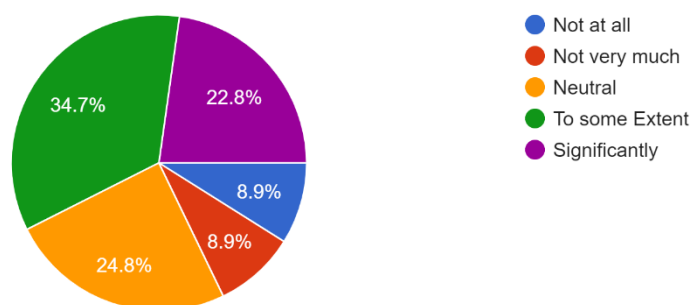
Parameter	Frequency	Percentage (%)
Not at all	09	08.90
Not very much	09	08.90
Neutral	25	24.80
To some Extent	35	34.70
Significantly	23	22.80
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.2 is exhibited in the Chart 2.2 as follows:

Chart 2.2: Diagrammatic Representation of Positive Impact of AI on Content Creation and Personalisation

How do you perceive the positive impact of AI on content creation and personalisation?
101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.2 and Chart No. 2.2 depicts that, 34.70% (35 Respondents) have expressed the opinion as 'To some Extent' and 22.80% (23 Respondents) have expressed the opinion as 'Significantly'. Hence, 57.50% (58 Respondents) have expressed the opinion that they perceive the positive impact of AI on content creation and personalisation.

2.3.3 Improved User Experience with AI in Media Sector

For the purpose of the study, the sample respondents' opinions are sought pertaining to improved user experience with AI in media sector, the analysis of which is presented as follows:

Table 2.3: Improved User Experience with AI in Media Sector

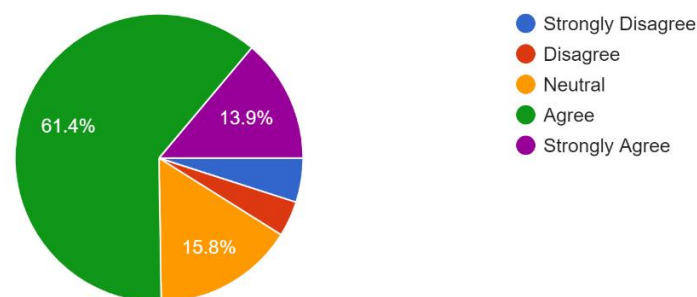
Parameter	Frequency	Percentage (%)
Strongly Disagree	05	05.00
Disagree	04	04.00
Neutral	16	15.80
Agree	62	61.40
Strongly Agree	14	13.90
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.3 is exhibited in the Chart 2.3 as follows:

Chart 2.3: Diagrammatic Representation of Improved User Experience with AI in Media Sector

Has AI improved user experiences in the media sector?
101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.3 and Chart No. 2.3 depicts that, 61.40% (62 Respondents) have expressed the opinion as 'Agree' and 13.90% (14 Respondents) have expressed the opinion as 'Strongly Agree'. Hence, 75.30% (76 Respondents) have expressed the opinion that AI has improved user experiences in the media sector.

2.3.4 Enhanced Efficiency of Media Production Processes with AI

For the purpose of the study, the sample respondents' opinions are sought pertaining to the enhanced efficiency of media production processes with AI, the analysis of which is presented as follows:

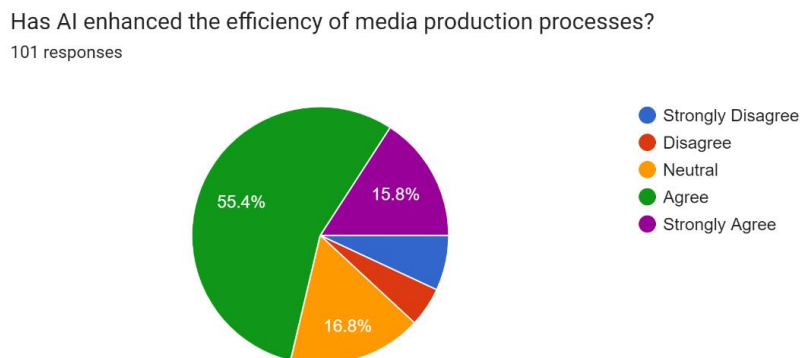
Table 2.4: Enhanced Efficiency of Media Production Processes with AI

Parameter	Frequency	Percentage (%)
Strongly Disagree	07	06.90
Disagree	05	05.00
Neutral	17	16.80
Agree	56	55.40
Strongly Agree	16	15.80
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.4 is exhibited in the Chart 2.4 as follows:

Chart 2.4: Diagrammatic Representation of Enhanced Efficiency of Media Production Processes with AI



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.4 and Chart No. 2.4 depicts that, 55.40% (56 Respondents) have expressed the opinion as 'Agree' and 15.80% (16 Respondents) have expressed the opinion as 'Strongly Agree'. Hence, 71.20% (72 Respondents) have expressed the opinion that AI has enhanced the efficiency of media production processes.

2.3.5 Influence of AI on Journalists Work

For the purpose of the study, the sample respondents' opinions are sought pertaining to the influence of AI on journalists work, the analysis of which is presented as follows:

Table 2.5: Opinion Regarding Influence of AI on Journalists Work

Parameter	Frequency	Percentage (%)
Strongly Disagree	05	05.00
Disagree	08	07.90
Neutral	23	22.80
Agree	50	49.50
Strongly Agree	15	14.90
Total	101	100.00

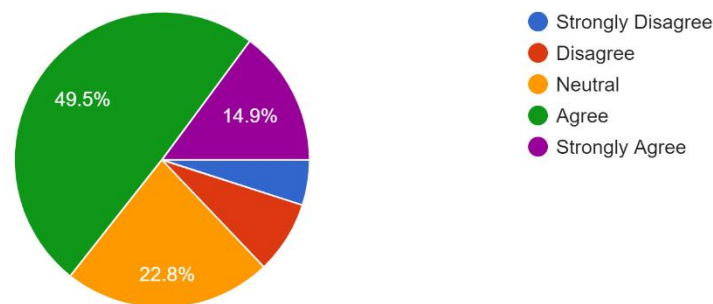
Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.5 is exhibited in the Chart 2.5 as follows:

Chart 2.5: Diagrammatic Representation of Influence of AI on Journalists Work

Has AI influenced the way journalists work and gather information?

101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.5 and Chart No. 2.5 depicts that, 49.50% (50 Respondents) have expressed the opinion as 'Agree' and 14.90% (15 Respondents) have expressed the opinion as 'Strongly Agree'. Hence 64.40% (65 Respondents) have expressed the opinion that AI has influenced the way journalists work and gather information.

2.3.6 AI posing Threat to Job Security in Media Industry

For the purpose of the study, the sample respondents' opinions are sought pertaining to the AI posing threat to job security in media industry, the analysis of which is presented as follows:

Table 2.6: Opinion Regarding AI posing Threat to Job Security in Media Industry

Parameter	Frequency	Percentage (%)
Strongly Disagree	09	08.90
Disagree	13	12.90
Neutral	27	26.70
Agree	39	38.60
Strongly Agree	13	12.90
Total	101	100.00

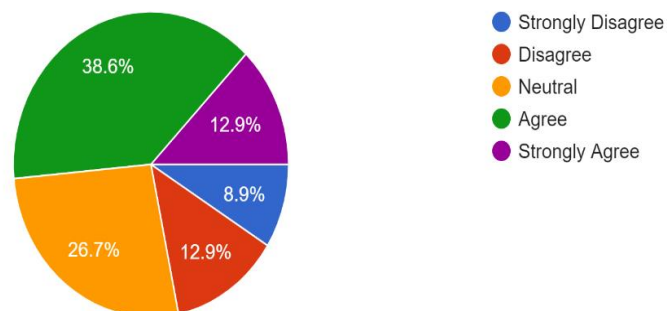
Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.6 is exhibited in the Chart 2.6 as follows:

Chart 2.6: Diagrammatic Representation of AI posing Threat to Job Security in Media Industry

Do you think AI poses a threat to job security in the media industry?

101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.6 and Chart No. 2.6 depicts that, 38.60% (39 Respondents) have expressed the opinion as 'Agree' and 12.90% (13 Respondents) have expressed the opinion as 'Strongly Agree'. Hence 51.50% (52 Respondents) have expressed the opinion that AI poses a threat to job security in the media industry.

2.3.7 Algorithmic Bias in AI-driven Media Recommendations

For the purpose of the study, the sample respondents' opinions are sought pertaining to the algorithmic bias in AI-driven media recommendations, the analysis of which is presented as follows:

Table 2.7: Algorithmic Bias in AI-driven Media Recommendations

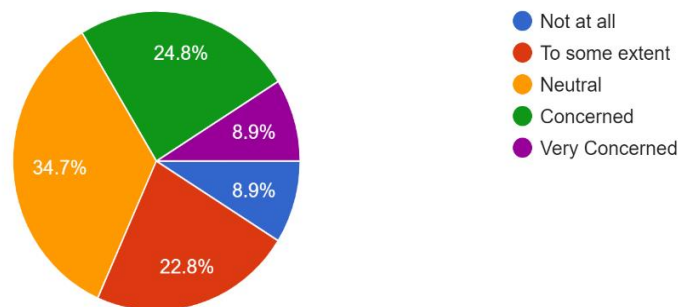
Parameter	Frequency	Percentage (%)
Not at all	09	08.90
To some Extent	23	22.80
Neutral	35	34.70
Concerned	25	24.80
Very Concerned	09	08.90
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.7 is exhibited in the Chart 2.7 as follows:

Chart 2.7: Diagrammatic Representation of Algorithmic Bias in AI-driven Media Recommendations

How concerned are you about algorithmic bias in AI-driven media recommendations?
101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.7 and Chart No. 2.7 depicts that, 34.70% (35 Respondents) have expressed the opinion as 'Neutral'. Hence, they are neither strongly concerned nor they are indifferent about the algorithmic bias in AI-driven media recommendations.

2.3.8 Privacy and Security Concerns arising from AI in Media Sector

For the purpose of the study, the sample respondents' opinions are sought pertaining to the privacy and security concerns arising from AI in media sector, the analysis of which is presented as follows:

Table 2.8: Privacy and Security Concerns arising from AI in Media Sector

Parameter	Frequency	Percentage (%)
Not at all	08	07.90
To some Extent	22	21.80
Neutral	24	23.80
Concerned	33	32.70
Very Concerned	14	13.90
Total	101	100.00

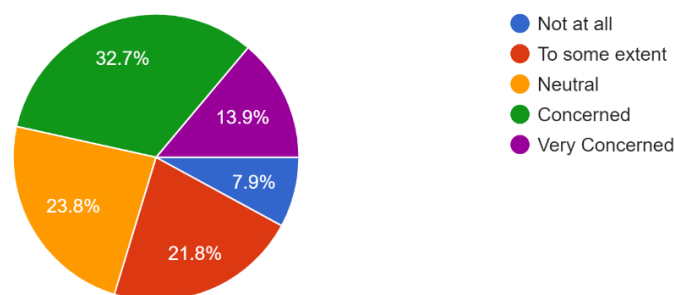
Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.8 is exhibited in the Chart 2.8 as follows:

Chart 2.8: Diagrammatic Representation of Privacy and Security Concerns arising from AI in Media Sector

Do you see potential privacy and security concerns arising from AI in the media sector?

101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.8 and Chart No. 2.8 depicts that, 32.70% (33 Respondents) have expressed the opinion as 'Concerned' and 13.90% (14 Respondents) have expressed the opinion as 'Very Concerned'. Hence 46.60% (47 Respondents) have expressed the opinion as they see potential privacy and security concerns arising from AI in the media sector.

2.3.9 Negative Impact on Media by Over-reliance on AI

For the purpose of the study, the sample respondents' opinions are sought pertaining to the negative impact on media by over-reliance on AI, the analysis of which is presented as follows:

Table 2.9: Opinion Regarding Negative Impact on Media by Over-reliance on AI

Parameter	Frequency	Percentage (%)
Strongly Disagree	04	04.00

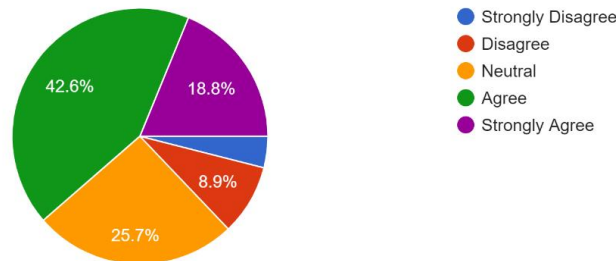
Disagree	09	08.90
Neutral	26	25.70
Agree	43	42.60
Strongly Agree	19	18.80
Total	101	100.00

Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.9 is exhibited in the Chart 2.9 as follows:

Chart 2.9: Diagrammatic Representation of Negative Impact on Media Industry by Over-reliance on AI

Can over-reliance on AI technology negatively impact the media industry?
101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.9 and Chart No. 2.9 depicts that, 42.60% (43 Respondents) have expressed the opinion as 'Agree' and 18.80% (19 Respondents) have expressed the opinion as 'Strongly Agree'. Hence 61.40% (62 Respondents) have expressed the opinion as over-reliance on AI technology can negatively impact the media industry.

2.3.10 Evolution of Media by Adoption of AI

For the purpose of the study, the sample respondents' opinions are sought pertaining to the evolution of media by adoption of AI, the analysis of which is presented as follows:

Table 2.10: Opinion Regarding Evolution of Media by Adoption of AI

Parameter	Frequency	Percentage (%)
Yes	76	75.20
No	03	03.00
May be	22	21.80
Total	101	100.00

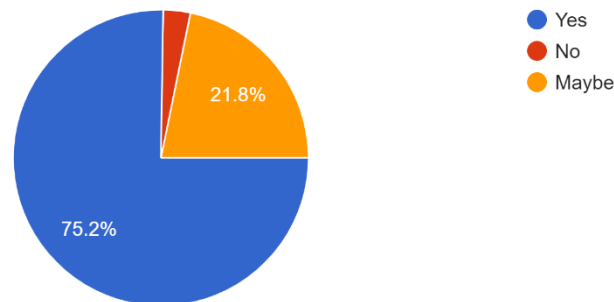
Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.10 is exhibited in the Chart 2.10 as follows:

Chart 2.10: Diagrammatic Representation of Evolution of Media by Adoption of AI

Do you think the media sector will evolve with the continued adoption of AI technologies?

101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding depicts that, 75.20% (76 Respondents) have expressed the opinion as 'Yes' indicating that media sector will evolve with the continued adoption of AI technologies.

Steps needed to Ensure Responsible AI Implementation

For the purpose of the study, the sample respondents' opinions are sought pertaining to the steps needed to ensure responsible AI implementation, the analysis of which is presented as follows:

Opinion Regarding Steps needed to Ensure Responsible AI Implementation

Parameter	Frequency	Percentage (%)
Strongly Disagree	05	05.00
Disagree	03	03.00
Neutral	22	21.80
Agree	46	45.50
Strongly Agree	25	24.80
Total	101	100.00

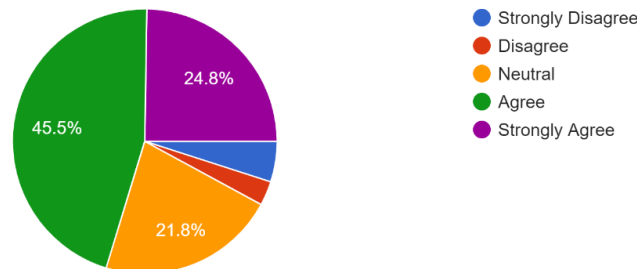
Source: Primary Data Analysis of Field Study 2024.

A diagrammatic representation of the data in the preceding Table 2.11 is exhibited in the Chart 2.11 as follows:

Diagrammatic Representation of Steps needed to Ensure Responsible AI Implementation

Should media organisations take steps to ensure responsible AI implementation and mitigate potential negative impacts?

101 responses



Source: Primary Data Analysis of Field Study 2024.

Observation and Interpretation of Data Analysis

The preceding Table No. 2.11 and Chart No. 2.11 depicts that, 45.50% (46 Respondents) have expressed the opinion as 'Agree' and 24.80% (25 Respondents) have expressed the opinion as 'Strongly Agree'. Hence 70.30% (71 Respondents) have expressed the opinion as media organisations should take steps to ensure responsible AI implementation and mitigate potential negative impacts.

Findings of the Study : The findings on the impact of AI on the media sector reveals a mix of advantages and challenges resulting from the integration of AI technologies. The significant observations of the summary from the findings can be presented in the succeeding points:

1. **Technological Advancements:** The rapid advancement of AI technologies has a profound impact on the media sector which has helped media organisations to gain insightful information about their audience which can be used to provide more pertinent content.
2. **Ethical Considerations and Transparency:** When implementing AI in media, ethical considerations must be at the forefront. Transparency regarding the use of AI algorithms is crucial to maintain trust with audiences. Media organizations should disclose when AI is used in content creation and clearly distinguish between AI-generated and human-generated content. Additionally, ethical guidelines should be developed to ensure responsible AI use in journalism. The ethical considerations and transparency to be maintained by media sector will help to retain their goodwill.
3. **Media Production:** AI has significantly streamlined media production processes by automating various tasks, such as editing and content generation. There is increased

efficiency and cost reduction brought about by AI-powered tools. However, some concerns were raised about the potential for reduced creativity and the need for human oversight in the production process.

4. **Media Consumption:** AI has positively impacted media consumption by enabling personalized content recommendations and enhancing user experiences. The tailored content suggestions, which improved the overall media consumption experience is appreciated. However, some concerns were raised about the potential for algorithmic bias and the influence of AI on shaping users' opinions and preferences.
5. **Challenges and Opportunities:** AI poses both challenges and opportunities for the media sector. Job displacement due to automation was a significant concern among media professionals. However, the potential for AI to augment human capabilities, rather than replace them, offers opportunities for professionals to focus on more creative and strategic tasks. Furthermore, the importance of addressing algorithmic bias and ensuring data privacy to maintain fairness, accuracy, and user trust in AI-driven media platforms is emphasised.
6. **Impact of Artificial Intelligence on Media in India:** The impact of AI on the media industry in India is multifaceted, encompassing various aspects such as media production, consumption, and the overall landscape of journalism and content creation. Some key areas where AI is making a significant difference in the Indian media sector are news gathering and reporting, personalised content recommendations, automated journalism, also known as "robo-journalism" or "algorithmic journalism", fake news detection, language processing and localisation of content in various Indian languages, making it accessible to a wider audience seeking to expand their reach and engage with non-English speaking users, advertising and marketing, journalism education and skills development.
7. **Positive Impact of Artificial Intelligence on the Media Sector:** AI is bringing about numerous positive changes in the media sector, enhancing efficiency, user experiences, and overall industry growth. Some of the most significant positive impacts of AI on the media sector include personalisation and targeted content, efficient content creation, enhanced audience insights, improved user experience, advanced journalism, data analysis, pattern recognition, and even language translation and investigative reporting, cost-effective advertising, automated production processes, accessibility and inclusion for people with hearing or visual impairments.

8. **Negative Impact of Artificial Intelligence on the Media Sector:** While AI has brought about numerous benefits to the media sector, it also presents some challenges and potential negative impacts. These include job displacement, algorithmic bias, privacy and security concerns risk of privacy breaches and unauthorized access to sensitive information. this could lead to the misuse of personal data and compromise user trust in media organizations, over-reliance/dependence on technology, reduced human connection, economic concentration, misinformation and fake news.

Suggestions to the Study : To optimise the impact of AI on the media sector, several suggestions can be implemented to address the challenges and opportunities presented by AI. These recommendations are elaborated succinctly as follows.

1. **Embrace Artificial Intelligence as an Aid, not a Replacement:** Media professionals should view AI as a tool to enhance their capabilities rather than a threat to their jobs. This mindset shift will encourage collaboration between humans and AI, fostering creativity and innovation in the media production process. There is a well-known adage which states, “Technology is a useful servant, but a terrible master”. Hence at no cost AI can be seen as a replacement to human intelligence rather it is to be seen as a supplement to it.
2. **Invest in Reskilling and Upskilling:** As AI automates certain tasks, media organisations should invest in training their workforce to adapt to new roles and responsibilities. This will ensure a smooth transition and maintain a skilled workforce capable of leveraging AI technologies. To be able to adapt to the ever-evolving AI landscape, media organisations must invest in the upskilling and retraining of their workforce.
3. **Foster Transparency in Artificial Intelligence Algorithms:** Media organisations should prioritise transparency in their AI-driven recommendation systems. By clearly communicating how algorithms work and the factors influencing content suggestions, users’ trust in the platforms can be maintained.
4. **Encourage Diverse Perspectives in Artificial Intelligence Development:** To mitigate algorithmic bias, media companies should involve a diverse range of professionals in the development and training of AI systems. This approach will help ensure that AI models reflect a variety of viewpoints and experiences, reducing the risk of skewed content recommendations.
5. **Establish Clear Guidelines and Policies:** Media organisations should develop and

enforce guidelines and policies that address AI-related challenges, such as job displacement, algorithmic bias, and privacy concerns. These guidelines should be regularly reviewed and updated to stay current with evolving AI technologies.

6. **Collaborate with Industry Stakeholders:** By working together with other media organisations, technology providers, and regulatory bodies, organisations can develop best practices and standards for responsible AI implementation. This collaboration will help create a more cohesive and sustainable approach to integrating AI in the media sector. On March 13, 2024, the European Parliament adopted the Artificial Intelligence Act which is the world's first concrete initiative for regulating AI. Indian media can pick up certain aspects from this European Union's AI Act until a such a statute is not enacted in India.
7. **Establish Best Practice Model:** Media organisations should develop a best practice model to be used as a guide to working in collaboration with AI systems.
8. **Consider Ethical Considerations:** AI has the potential to revolutionise the media sector from content creation and distribution to personalised recommendations and enhanced user experiences. It is important to consider the potential challenges and ethical considerations associated with the adoption of AI in media sector.
9. **Reduce Over-reliance on AI:** While the AI tools are useful for information analysis but human judgment and critical thinking remains irreplaceable. Hence over-reliance on AI poses a risk. AI should be used as a complementary and not a replacement to human judgment.
10. **Beware of Deepfakes and Manipulation:** Fake news or the dissemination of false information as if it were true has become a problem within the context of generative AI. There is a need to combat fake news generated by AI technology which spreads fake information. The same AI technology is used to create highly convincing fake content. This poses a significant challenge to media contents where its users need to struggle in distinguishing between authentic and manipulated media contents.

Implementing these suggestions can help maximise the potential of AI in the media sector while addressing the challenges it presents. By embracing AI as an aid, investing in workforce development, promoting transparency, and fostering collaboration, the media industry can harness AI technologies to enhance efficiency, personalise content, and improve user experiences responsibly.

Limitations of the Study :

1. The study is restricted to the sample size of 101 respondents drawn using random sampling technique.
2. The study is based on researcher's observation regarding the concepts of impact of AI on media. The researcher agrees with the view that many other dimensions can be added to this study in order to make it more fruitful and pragmatic in nature.
3. Similarly, it is accepted that this study has its own limitations of resources, data analysis software tools, funds, time and skills.

Conclusion: The present research work focussed on the primary data analysis and its key findings. This research aims to contribute to the existing literature on AI's impact on the media sector by providing insights into the positive and negative effects, challenges, and opportunities. The study's findings will be an eye-opener relevant to media professionals, policymakers, and AI technology providers, helping them make informed decisions about the adoption and implementation of AI in the media sector. The research will also serve as a foundation for future studies on AI's role in shaping the media landscape.

Advances in AI are likely to bring significant changes in the media landscape. AI can make media more personalised, engaging and effective. AI is significantly impacting the media sector, revolutionizing the way content is created, distributed, and consumed. Its applications span across various aspects of the industry, from content generation and personalized recommendations to audience segmentation and targeted advertising. AI technologies, such as machine learning, natural language processing, and computer vision, are enhancing the overall user experience and enabling more efficient and effective media operations.

References :

1. Arvidson, M., & Lyon, F. (2014). *Social Impact measurement and non-profit 1*. Chan-Olmsted, Sylvia M. *A Review of Artificial Intelligence Adoptions in the Media Industry, International Journal on Media Management, Volume 21, 2019 - Issue 3-4*.
2. Don Sumner, *AI in Entertainment and Media (The Artificial Intelligence Revolution)*, Kindle Edition.
3. Kothari, C. (2004). *Research Methodology: Methods and techniques (2nd Revised Edition)*. New Delhi: New Age International (P) Limited, Publishers.
4. Manoj Govindaraj et al. "Role of Artificial Intelligence Across Various Media Platforms: A Quantitative Investigation of Media Expert's Opinion", *Journal of Law*

- and Sustainable Development, Vol. 11 No. 5 (2023).*
5. *Nils Berg. Artificial Intelligence: Beginnings, Present, and Future: The AI Revolution Shaping the World during Our Lifetime. Kindle Edition.*
 6. *Pandian Sundara P. (Dr.), Muthulakshmi S. (Dr.), Vijayakumar T. (Dr.). (2022). Research Methodology & Applications of SPSS in Social Science Research. Sultan Chand & Sons.*
 7. *S. Russell, and P. Norvig. (2010). Artificial Intelligence: A Modern Approach (3rd Edition). Prentice Hall.*
 8. *Suleyman, Mustafa and Michael, Bhaskar. The Coming Wave: Technology, Power, and the Twenty-first Century's Greatest Dilemma Crown, 2023.*

A Study & Implementation of Safety Mechanism in the Assembly Process

Mr. Ashok Keshav Karande (Student)

Rajgad Institute of Management Research and Development, Pune 43

Dr. Rohan Dahivale (HoD)

Rajgad Institute of Management Research and Development, Pune 43

Abstract:

This research delves into the pressing need for optimizing assembly processes, particularly focusing on the drafting hood system. The study encompasses a comprehensive review of existing processes concerning standardization, cost-effectiveness, and desired capacity. Furthermore, it explores avenues for enhancing the work environment to ensure smooth workflow, employee motivation, safety, and cost-effectiveness. The research methodology involves addressing management questions related to safety hazards, ergonomic outcomes, optimization strategies, and key performance indicators. The research problem highlights safety-centric, integration, and resource efficiency challenges within the assembly processes. Through strategic problem analysis, data analysis, and interpretation, the study identifies areas for improvement and proposes solutions to streamline processes, enhance safety, and improve productivity. Overall, the research aims to facilitate a safer, more efficient, and cost-effective assembly process for the drafting hood system.

Keywords: *Assembly processes Drafting hood system Optimization Safety*

Introduction: Assembly processes play a pivotal role in manufacturing operations, dictating productivity, safety, and cost-effectiveness. This research underscores the critical need to review and optimize assembly processes, particularly focusing on the drafting hood system. By scrutinizing existing processes through the lenses of standardization, cost, and capacity, the study aims to identify areas for enhancement. Moreover, it recognizes the importance of fostering a better work environment conducive to smooth workflow, employee motivation, safety, and cost-effectiveness. Through a structured research methodology, including management questions and problem analysis, the study aims to tackle safety hazards, ergonomic concerns, and resource inefficiencies inherent in assembly processes. By analyzing production data and interpreting findings, the research

seeks to propose actionable solutions for improving processes, enhancing safety, and boosting productivity. Ultimately, this research endeavors to contribute to the creation of a safer, more efficient, and cost-effective assembly process for the drafting hood system.

Need of the Study:

a) Process Review:

To review the existing process in line with Standardization, working environment, Cost prospective, desired capacity, deliverables to get the crystal-clear picture about:

- 1) Current Resources Vs Actual Requirement
- 2) Current Cost Vs Desired Cost
- 3) Process Standardization
- 4) Motivating work environment

b) Better Work environment:

To design & develop better Work environment need to review existing process, existing work set up & concerns, to find out the different alternatives, contingencies & cost-effective solutions for the following:

- 1) Smooth Working flow
- 2) Employee Motivation
- 3) Better Safety
- 4) Cost Effective

Research Methodology:

Management Questions

- What are the primary safety hazards associated with the current assembly processes?
- How do assembly processes affect Ergonomical outcomes?
- What optimization strategies can be implemented to improve safety?
- What agronomical practices can be integrated to enhance productivity?
- What are the key performance indicators (KPIs) to measure the success of the optimized processes?

Research Problem:

▪ Safety-Centric Problem Statement:

"The assembly process in our manufacturing facility has a high incidence of workplace accidents and safety hazards. How can we optimize the assembly process to significantly reduce safety risks and create a safer working environment for our employees?"

▪ **Integration Problem Statement:**

"The challenge lies in simultaneously enhancing safety measures and ensuring that assembly processes align with sustainable ergonomical practices. How can we strike a balance between these two objectives in our assembly processes?"

▪ **Resource Efficiency Problem Statement:**

"Our assembly processes consume substantial resources, and we want to reduce environmental impacts. What strategies can we employ to optimize these processes, improving both safety and resource efficiency?"

▪ **Safety & Ergonomical Statement:**

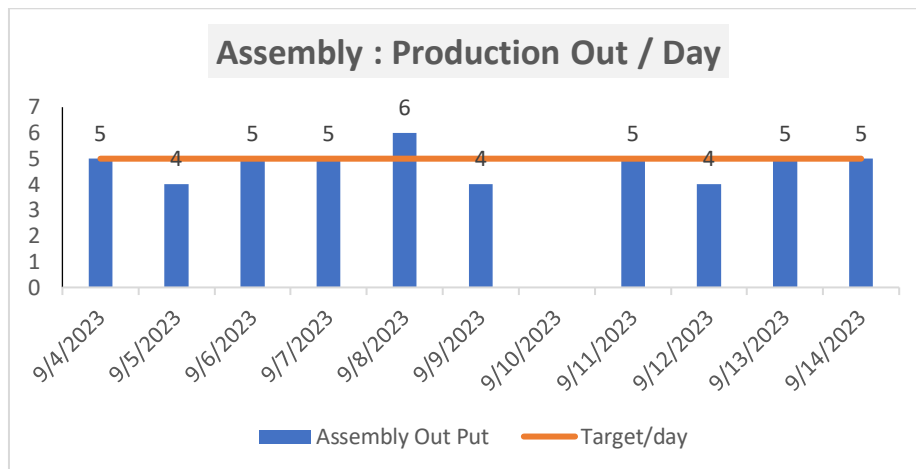
Safety and Ergonomical practices integrated into assembly processes. How can we effectively train and educate our employees to work within the optimized processes?"

Research Objectives:

- 1) To Study the existing Assembly Process.
- 2) To identify the issues in the existing Assembly Process related to Safety.
- 3) To ensure smooth working assembly process, with optimum resources through work standardization.
- 4) To streamline the related Assembly process i.e., Drafting Hood Assembly, need to review the existing process, existing system through Work Analysis

DATA ANALYSIS & INTERPRETATION

Sr. No.	Date	Machine Descriptions	Assembly Output / Day
1	04/09/2023	RSB-D 50	5
2	05/09/2023	RSB-D 50	4
3	06/09/2023	SB-D50	5
4	07/09/2023	RSB-D 26	5
5	08/09/2023	RSB-D 50	6
6	09/09/2023	RSB-D 26	4
7	11/09/2023	RSB-D 50	5
8	12/09/2023	RSB-D 50	4
9	13/09/2023	SB-D50	5
10	14/09/2023	RSB-D 26	5
Total			48

Table 1**Graph 1****Production Losses:**

Considering the above production data for 10 days it looks like there is having production losses.

- 1) On 5th Sept'2023 --- Production Output (04 No. against Target 05 Nos)
- 2) On 8th Sept'2023 --- Production Output (06 No. against Target 05 Nos)
- 3) On 9th Sept'2023 --- Production Output (04 No. against Target 05 Nos)
- 4) On 10th Sept'2023 --- Production Output (No Production)
- 5) On 12th Sept'2023 --- Production Output (04 No. against Target 05 Nos)

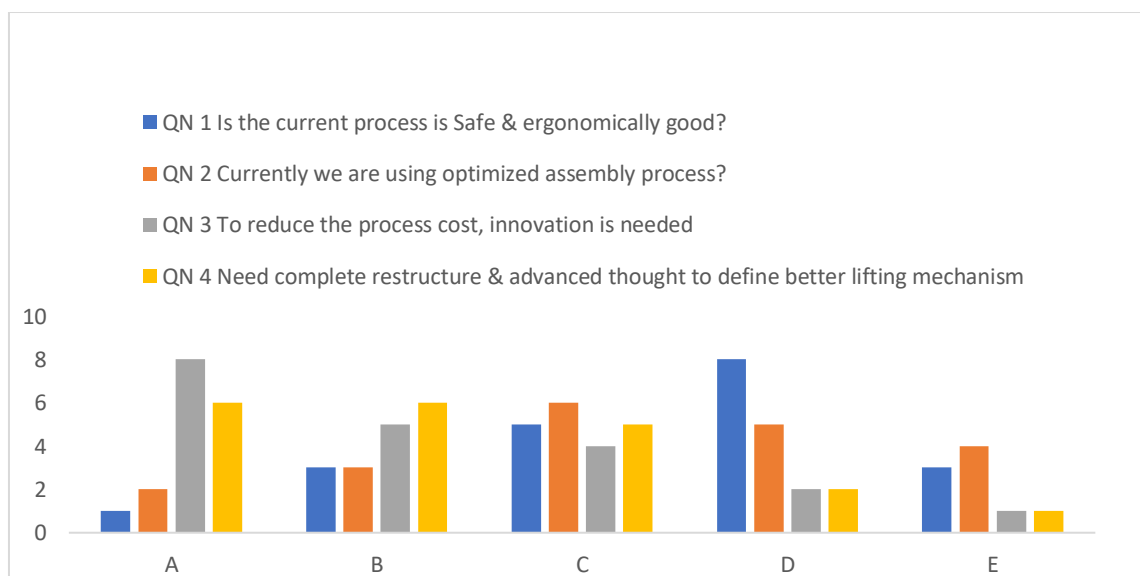
Sr. No.	Date	Assembly Out Put	Target/day	Losses (Qty)
1	04/09/2023	5	5	0
2	05/09/2023	4	5	1
3	06/09/2023	5	5	0
4	07/09/2023	5	5	0
5	08/09/2023	6	5	-1
6	09/09/2023	4	5	1
7	11/09/2023	5	5	0
8	12/09/2023	4	5	1
9	13/09/2023	5	5	0
10	14/09/2023	5	5	0
Total		48	50	2

Table 2

To design better process to get the desired result in line with Safety, Good ergonomically, better stability & sustained optimized process following data has been reviewed through the multiple angles.

QN	Questions	1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree	Total
		Responses					
1	Is the current process is Safe & ergonomically good?	1	3	5	8	3	20
2	Currently we are using optimized assembly process?	2	3	6	5	4	20
3	To reduce the process cost, innovation is needed	8	5	4	2	1	20
4	Need complete restructure & advanced thought to define better lifting mechanism	6	6	5	2	1	20

Table 3



Graph 2

Findings

1) Safety & Ergonomically Concerns:

- a) Looking the data interpretation related to the Safety & ergonomically concerns it seems that there is having scope of improvements.
- b) Observed frequently production losses due to Safety & ergonomically concerns (Thrice in the 10 days)
- c) Entire assembly process is tedious with reference to safety & ergonomics, as there is involvement of 3 operatives to lift the structure manually with crane instead of any permanent equipment.

2) Process:

- a) Looking the entire assembly process, it seems tedious, lengthy & unsafe.
- b) Based on “Work Measurement” study observed the assembly operation running in the three-shift basis with different appraisals.

3) Productivity:

- a) Due the utilization of additional man hours than required, the impact comes on the
- b) Productivity i.e. here observed almost 30% gap in the productivity.
- c) Getting delayed the output than required due to the variance & dependencies.

4) Cost Analysis:

- a) Any Process or activities, the cost plays major role. This parameters is indicates the Profit or Loss.
- b) In any Industry or Institutions or Corporates the cost benefit is the key parameters & also one of the most Important KPI also.
- c) The prime focus of this study is the improve & optimize overall Assembly process through building up of safe & ergonomical work culture

Conclusion : In conclusion, addressing concerns surrounding the assembly process of the drafting hood system is imperative for fostering a conducive work environment. The current unsafe assembly process, coupled with manual lifting and time-consuming activities, not only jeopardizes employee safety but also hampers productivity and incurs unnecessary costs. By adopting a thought process centered on resource optimization and simplicity, a revamped assembly process can be achieved. This optimized process ensures better manpower utilization, enhances safety, and reduces costs significantly. Moreover, it promotes better ergonomics, leading to increased labor productivity and employee motivation. Externalizing the conclusion, the proposed solutions offer efficient lifting mechanisms, streamlined operations, and cost-effective alternatives. Embracing these changes not only mitigates risks but also transforms waste into opportunity, rendering the assembly process portable, efficient, and ultimately, beneficial for all stakeholders involved.

References :

- i.B, M. *Operations Management*. Pearson Publication.
- ii.M, D. L. *Industrial Safety Management*.
- iii.Sharma, D. P. *Production Engineering*. S. Chand Publication.

CSR Initiative made by the Indian Company for achieve substantial development goal

Ms.Kalyani Rambhau Bhalerao (M.Com)

Mail-Id : kalyanibhalerao897@gmail.com

Dr. Kishor N. Jagtap

Director, S.N.G. Institute of Management and Research

E- mail- knjagtap@gmail.com

Abstract :

Corporate social responsibility (CSR) is the responsibility of each corporate entity run business and to work towards growth, entity run business and to work towards growth, expansion and stability and thus earn profit. If the corporation is to achieve social and economic ends. The study delves into how Indian companies approach CSR, including their focus areas such as environmental sustainability community development, employee welfare and ethical business practices. Through a comparative analysis, this article highlights the differences and similarities in CSR approaches among India companies, shedding light on best practices and areas for improvement. overall, the research contributes to a deeper understanding of CSR practices in the Indian corporate landscape and offers insights for stakeholders aiming to enhance their social and environment. the Company Act 2013 which dedicate the part of Act (Section 135) for corporate social Responsibility. As per new company Law 2012, all companies must contribute 2% of their net profit towards CSR which made Indian Company compulsory work towards CSR, as it is required a prescribe class of company to spend a portion of their profit on CSR activity. This study aims to investigate the focus areas of the different CSR Contributing company in India .the research is based on the Secondary data obtain from national CSR portal of these company for the year 2022-23.

Keywords: *Corporate Social Responsibility, Company Act 2013, Society*

Introduction: CSR isn't always a modern-day concept in India. Since their inception, companies like Tata Group, Aditya Birla Group and Indian Oil, Corporation, to name a few, have been committed to serving the community. Many other organizations contribute to the well-being of society through donations and charitable events. The main goal of CSR today is to maximize a company's overall impact on society and its stakeholders. Corporate Social Responsibility (CSR) refers to the way in which companies design their business processes so that they have an overall positive impact on society.It includes management, social problems,

influence and the ethics of functioning in society. The stakeholders covered by CSR are: customers, suppliers, employees of business, partners, Shareholders/investors, Line India is the number one the united states within side the worldwide to make CSR spending mandatory. According to the Companies Act, 2013, any company with a net worth of Rs. 500 crore or more or an income above Rs.1000 crore or a net profit of Rs. 5 crore must allocate at least 2% of the average net profit of the last three years for CSR activities. The aim of this study is to examine various companies contributing to CSR in India.

The Objective of the Study : The following points are to address the basic objectives of the different company initiatives towards CSR development and improvement in India

- 1) To understand the concept of CSR.
- 2) To analyses the CSR initiatives of some of the company in the India.
- 3) To understand the new CSR provision given in Company in India.
- 4) To improve knowledge in legal framework on CSR in India.

Research Methodology : The study has been conduct to understand CSR initiatives taken by different Indian company for achievement of sustainable development goal. This paper is conceptual in nature. The approach adopted is analytical and based on extensive literature review on CSR. The Data of this research/ study is Secondary data which have been collected from different sources such as official websites of department of Corporate Sectors. Ministry of Corporate Affairs, Newspaper articles, Journals, Research Paper, Media Reports and Research Magazine's that has been published on the topic. This research is based the observation from the student circle and local area general public for the data implementation with it.

Review Of Literature: Corporate Social Responsibility (CSR) has gained increasing prominence globally, with governments and organizations recognizing the need for businesses to contribute positively to society. In the Indian context, the government's initiatives to encourage CSR practices among listed companies have become a pivotal aspect of corporate governance. This literature review aims to explore and synthesize insights from multiple articles on CSR contributions by different listed companies in India.

DR. praveeb B Patil, Prof Pavankumar Ramgounda, this article gives brief information about CSR Contribution different listed Company. In India.it study it accomplished that the government has initiative csr because it want company to became moew accountable for its stockholders and society.

Amit kumar, gayatri negi, vipulmishra, shraddha pandey According to their study TATA group is the concern it has gone a long way in fulfilling its duty and responsibility towards the society and nation they give information csr spending activity by tata trust in financial year.

Scope of the Study: The current study focuses on examining CSR contribution made by different company in India. The research study is empirical in nature, relying on secondary data. study help to understand CSR in Society and Social development , stakeholder in management, CSR in ethical and Legal Business Practices.

Overview : The concept of CSR in India can be traced back to the pre- independence ear when some industrialists, like the Tatas and Birlas, engaged in philanthropic activities for societal welfare. after independence in 1947, the India government focused on economic development through five- year Plans. However, CSR initiative were largely voluntary and sporadic during this period. mid 1970-1980 the government introduced the concept of Corporate Social Responsibility through legislation such as the Company Act, 1956. Amendments in the act required companies to spend a portion of their profit on social welfare activities. This was known as Corporate Philanthropy. In 1990 Economic liberalization in early 1990 led to changes in the business environment. Companies started recognizing CSR as an essential aspect of their operations, beyond mere philanthropy. 2009 the Indian government formalized CSR through the companies Act, 2013. It mandated companies meeting certain criteria to spend 2% of their average net profit on CSR activities. This marked a significant shift from voluntary CSR to a legally enforceable mandate.

The overview company Act 2013, Clause 135: The company Act 2013 enacted on 29 August 2013 on accord of honorable president assent, has the potential to be historic milestone, as it aims to improve corporate presidents assent, has the potential to be a historic milestone, as it aim to improve corporate governance, simplify regulations, enhance the interests of minority investors and for the first time legislates the role of whistle-blowers. The new law will replace the nearly 60 year old company act 1956. Regulation under Section 135(1) of Indian Companies Act with an annual turnover of more than Rs. 1000 Crores (or) a net worth of Rs. 500 Crores (or) annual net profit of Rs 5 crores and above, has spend atleast 2% of their Average net profit accrued over the last 3 financial year on their CSR activities.

CSR committee: In India the Ministry of Corporate Affairs has issued various rules and regulations for the formulation of CSR committee and monitor of CSR policy with includes the undertaking of CSR activities regularly, roles of Board members in the CSR committee, disclosure of CSR report which came into effect on 1 April 2014. Section 135(2) give

information about composition for the discloser of CSR committee to the Government and Society. And 135(3) recommends the Companies about the CSR policy, amount of expenditure to be incurred and also monitor the CSR policy of the company time to time. Constituted CSR committee required 3 or more directors in a company, among these 3 directors, at least one director must be independent director

Analysis and Interpretation : CSR practice in India during the year 2022-23

a) Tata Trust:

In a country with the world's second-largest population, hope for a bright and sustainable future grows when one of its largest companies happens to turn out to be a philanthropic organization. To people across the country, Tata Trusts symbolize humanity and embody an extraordinary force that sets new frontiers for social and economic development. is considered the father of Indian industry and one of the most important builders of the modern Indian economy. In Jamsetji introduced the apprentice system, kindergartens and primary school classes for children for the benefit of his employees, which became incorporated into the policies of many of his successful leaders. The plans included a free pension fund, a provident fund, a maternity benefit and an accident compensation fund for all workers, which was ahead of its time. although the prescribe CSR for the financial year 2022-23 was Rs.5-10 crore , the company has spend this money for development project it help to improving the quality of life and fostering sustainable and integrated development in the communities. The principle aim and objective as written in the memorandum of association of which tata trust is a principle promoter is to undertake, carry out, promote, sponsor, assist or aid directly or in other manner, any activity for:

- Promotion and growth of rural economy
- Agriculture, food and nutrition
- Education and Employment
- Energy, Environment and Climate change
- Healthcare
- Livelihoods
- Water and Sanitation

The company has undertaken many of the project and program under CSR activities for the financial year 2022-23. The major projects are healthcare environment Integrity insurance program, Skill and Education Promotion, Social, Economic and Environmental Development and non- farm based Livelihood Program.

b) Wipro Limited

Is leading global information technology, consulting and business process services company. They harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help their clients adapt to the digital world and make them successful. Wipro is a not-profit trust that engages with underprivileged community in proximity across education, primary healthcare and ecology. In FY 2022-23 the company spent a total of 215.7 crores on its CSR initiatives, exceeding its obligation of it spending Rs. 198.6 Crore as per the company Act 2013. In addition the trust also work on long- term rehabilitation of affected communities after natural disasters. The focus areas and the scope of work are.

- Education for underprivileged
- Education for children with disability
- Primary healthcare
- Community ecology
- Disaster Rehabilitation
- Water and sanitation
- Healthcare

Similarly, they are mention company Act 2013 Schedule VII.

c) Infosys

Infosys is commitment to the communities in which it operates. Anot-for – profit initiative aimed at fulfilling the social responsibility of Infosys Ltd, the Infosys Foundation creates opportunities and strives towards a more equitable society. Established in 1996, the Infosys supports programs in the areas of education, rural development, healthcare, art and culture, and destitute care. Its mission is to work in remote regions of several states in India. During the fiscal year 2022-23 Infosys spent a significant sum of Rs. 391.51 crore in various CSR project, with an addition Rs. 64.39 crore channeled towards ongoing project from the fiscal years 2021-and 2022. A leftover of Rs. 45.33 crore , allocated for various ongoing project will moved to the unspent CSR account for future use.

d) Mahindra And Mahindra Limited;

Mahindra and Mahindra limited the flagship company of the Mahindra Group is a mobility products and farm solutions provider. The company has grown rapidly since its inception in 1947. It currently offers a wide range of product and solutions ranging from SUVs t electric

vehicles, pickups, commercial vehicles, tractors, two-wheelers and construction equipment. The company CSR works is directed mainly at the development of girls, youth and farmers who are supported through initiatives in education, health and the environment. They are spend the CSR amount in 2022-23 are 25.0 - 50.0 Cr INR .CSR thematic areas

- Agriculture, food and nutrition
- Community Development
- Education and Employment
- Energy, Environment and Climate change
- Healthcare
- Livelihoods Water and sanitation.

e) Ongc Limited

ONGC was set up under the visionary leadership of Pandit Jawahar Lal Nehru. Pandit Nehru reposed faith in shri Keshav Dev kalviyawh laid the foundation of ONGC in the form of the Oil and Gas division, under Geological Survey of India, in 1955. A later it convert into Oil and Natural Gas Decorate. The vision of impacting and socially transforming the lives of the underprivileged, ONGC has created a trust in 2014, ONGC foundation with the objective to undertake augment and facilitate activities initiatives and project relating to corporate social responsibility .ONGC as a leading Maharatna of the nation has set a benchmark continuously for the last two years by achieving 100% utilization of CSR budget which has been to the tune of over Rs. 500 crore each year . This reflects ONGCs commitment as a responsible corporate citizen of giving back to the society in equal measure. They spend on social domains on education, health, skill development and livelihood, environment and social institution building.

Conclusion : Corporate In conclusion, the research paper highlights the commendable Corporate Social Responsibility (CSR) initiative undertaken by the Indian company in pursuit of substantial development goals. The company's commitment to social responsibility goes beyond profit-making, demonstrating a genuine dedication to making a positive impact on society.

The research delves into the specific CSR initiatives implemented by the company, shedding light on their strategic approach and the measurable outcomes achieved. Through meticulous analysis, it becomes evident that these initiatives are not just token gestures but integral components of the company's ethos and values. The study underscores the multifaceted

benefits derived from the CSR activities, ranging from community development to environmental sustainability. By aligning its business practices with broader societal needs, the company has positioned itself as a responsible corporate citizen, contributing to the overall welfare of the communities it serves.

Reference:

1. Amit Kumar Srivastave, Gayatri Negi, Vipul Mishra, Shraddha Pandey, (2012), *Corporate Social Responsibility : A Case Study Of TATA Group*, IOSR Journal Of Business And Management (IOSRJBM), [Wwwiosrjournals.Org](http://www.iosrjournals.org)
2. Aryn Sharma, Pinki Sharma(2023), *Present Position Of Corporate Social Responsibility (CSR) In India : A Descriptive Study*, Asian Journal Of Economics, Finance And Management, Volume 9, Issue 1 Page 1-12, 23023; Article No AJEFM
3. Dr. Praveen B., Pavankumar Ramgouda, (2023), *Corporate Social Responsibility : A Study On CSR Practicrs Of Select Indian Companys*, Universe International Journal Of Interdisciplinary Ressearch (Peer Reviewed Refereed Journal), DOI NO- 08.2020-25662434.
4. Mr. N.Sanjeevan(2022), *CSR Initiative Made By Listed Companies Towards India*, International Journal Of Latest Engineering And Management Research(IJLMER), DOI NO: 10.56581/IJLER7.8.34-42
5. Pragnesh Bhikhabhai Dalwadi, GuruduttaJapee, (2023), *A Study Of THE FOCUS AREAS OF THE TOP TEN CSR CONTRIBUTING COMPANIES IN INDIA*, Peer-Reviewed, Multilingual Journal, ISSN 2321-1520 E-ISSN : 2583-3537
6. Raj Kumar Singh, Naresh Kumar, Ajay Kumar, (2023), *Impact Of Corporate Governance Practices On Financial Performance Of Listed Companies In India*, INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) IJRAR.ORG An International Open Access, Peer-Reviewed, Refereed Journal, E- Issn : 2348-1269, P – ISSN :2349-5138
7. <https://Csrnbox.Org> –
8. *India CSR Outlook – Report 2023- By – CSRBOX*
9. [https:// Www.Researchgate.Net/Publication](https://Www.Researchgate.Net/Publication)
10. <https://Csrbox.Org/Csr -Foundation/ Foundation –Detail-Wipro Foundation 75>
11. <http://Thecsrjounal.In>
12. <http://Csrbox.In>
13. <http://Indiacsr.In>

A Study & Implementation of Safety Mechanism in the Assembly Process

Mr. Ashok Keshav Karande (Student)

Rajgad Institute of Management Research and Development, Pune - 43

Dr. Rohan P. Dahivale (Head of the Department)

Rajgad Institute of Management Research and Development, Pune - 43

Abstract :

This study focuses on enhancing the assembly process in modern manufacturing, where intricate components converge to form functional products. With technological advancements shaping industries, the imperative of ensuring worker safety and optimizing assembly lines is crucial. The research delves into the implementation of safety mechanisms, addressing challenges posed by automation, human-machine collaboration, and complex tasks.

The primary objective is to analyze existing safety protocols, identifying areas for improvement across diverse assembly environments. Recognizing the intertwined nature of safety and productivity, the study seeks to offer insights that strike a balance between operational efficiency and worker well-being.

Management questions explore safety hazards, ergonomic outcomes, optimization strategies, agronomical practices, and key performance indicators. Data analysis reveals production output, losses, and observations about safety concerns. The findings stress the need for innovation, automation, and cost-effective measures to optimize assembly processes, reduce manpower, enhance productivity, and ensure a secure working environment. The study recommends practical, cost-effective solutions, including "Best from Waste" initiatives, to bring about tangible improvements in assembly processes and worker safety.

Keywords: *Assembly Process, Safety Mechanism, productivity enhancement*

Introduction: In the realm of modern manufacturing, the assembly process stands as a crucial stage where intricate components come together to form functional products. As technological advancements propel industries forward, ensuring the safety of workers and the efficiency of assembly lines has become paramount. This study delves into the comprehensive exploration and implementation of safety mechanisms within the assembly

process, addressing the ever-evolving challenges posed by automation, human-machine collaboration, and complex assembly tasks.

The primary objective of this investigation is to analyze existing safety protocols and identify potential areas for enhancement, taking into account the dynamic nature of assembly environments. From robotic workstations to manual assembly stations, a holistic approach will be undertaken to integrate state-of-the-art safety measures that not only comply with industry standards but also push the boundaries of innovation.

This study acknowledges the symbiotic relationship between safety and productivity, recognizing that a well-designed safety mechanism not only safeguards personnel but also optimizes the assembly workflow. By merging theoretical insights with practical implementations, the research aims to contribute valuable insights for manufacturers seeking to strike the delicate balance between efficiency and worker well-being in the intricate dance of the assembly process. As industries embrace automation and technological sophistication, the findings of this study are poised to shape the future landscape of safety practices in assembly, fostering a secure and progressive manufacturing environment.

Research Objectives

1. To Study the existing Assembly Process.
2. To find the issues in the existing Assembly Process related to Safety.
3. To ensure smooth working assembly process, with optimum resources through work standardization.
4. To compute profit & loss analysis, product costing plays vital role. Process cost or Product cost is depending on the Nature of Work, Activities, Efforts, direct & indirect transportations.

Management Questions

1. What is the primary safety hazards associated with the current assembly processes?
2. How do assembly processes affect Ergonomical outcomes?
3. What optimization strategies can be implemented to improve safety?
4. What agronomical practices can be integrated to enhance productivity?
5. What are the key performance indicators (KPIs) to measure the success of the optimized processes?

Research Problem Issues

- a) **Safety-Centric Problem Statement:** "The assembly process in our manufacturing facility has a high incidence of workplace accidents and safety hazards. How can we

optimize the assembly process to significantly reduce safety risks and create a safer working environment for our employees?"

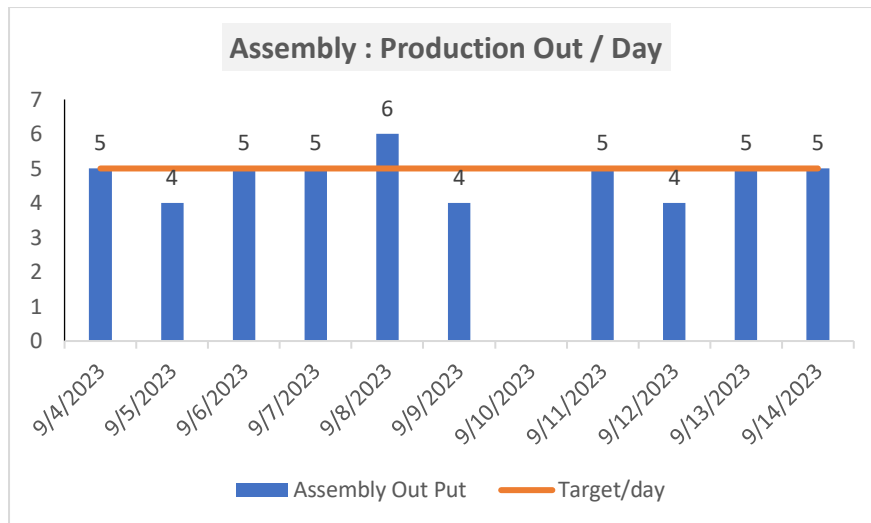
- b) Integration Problem Statement:** "The challenge lies in simultaneously enhancing safety measures and ensuring that assembly processes align with sustainable ergonomical practices. How can we strike a balance between these two objectives in our assembly processes?"
- c) Resource Efficiency Problem Statement:** "Our assembly processes consume substantial resources, and we want to reduce environmental impacts. What strategies can we employ to optimize these processes, improving both safety and resource efficiency?"
- d) Safety & Ergonomical Statement:** Safety and Ergonomical practices integrated into assembly processes. How can we effectively train and educate our employees to work within the optimized processes?"

Data Analysis & Interpretation

Production Output

Sr.No.	Date	Machine Descriptions	Assembly Output / Day
1	04/09/2023	RSB-D 50	5
2	05/09/2023	RSB-D 50	4
3	06/09/2023	SB-D50	5
4	07/09/2023	RSB-D 26	5
5	08/09/2023	RSB-D 50	6
6	09/09/2023	RSB-D 26	4
7	11/09/2023	RSB-D 50	5
8	12/09/2023	RSB-D 50	4
9	13/09/2023	SB-D50	5
10	14/09/2023	RSB-D 26	5
Total			48

Table 1



Graph 1

Production Losses :

Considering the above production data for 10 days it looks like there is having production losses. i.e.

- 1) On 5th Sept'2023 --- Production Out put (04 Nos against Target 05 Nos)
- 2) On 8th Sept'2023 --- Production Out put (06 Nos against Target 05 Nos)
- 3) On 9th Sept'2023 --- Production Out put (04 Nos against Target 05 Nos)
- 4) On 10th Sept'2023 --- Production Out put (No Production)
- 5) On 12th Sept'2023 --- Production Out put (04 Nos against Target 05 Nos)

Observations :

Safety & Ergonomically Concerns:

- a) Looking the data interpretation related to the Safety & ergonomically concerns it seems that there is having scope of improvements.
- b) Observed frequently production losses due to Safety & ergonomically concerns (Thrice in the 10 days)
- c) Based on current assembly process & Way of Work, there is having room to make safe & ergonomically good work environment and perhaps to make streamlined assembly process.
- d) Safe working culture makes the – Stability, Productivity, Sustenance & Good working environment.

Process:

- a) Looking the entire assembly process, it seems tedious, lengthy & unsafe.

- b) Based on “Work Measurement” study observed the assembly operation running in the three-shift basis with different appraisals.
- c) The process time is around 17 Mins/ Assembly. Observed variance in the cycle time based on the different appraisals to appraisal. (i.e. 15 Min, 18 Min, 17 Min etc.)
- d) To make the assembly process mandatory required 3 Operatives, ideally should be required only 2 operators or 1 operator.

Productivity:

- a) Calculation of Productivity is the “Ratio of Input to Output” i.e.
Labor Productivity = Output / Input
* **Output:** In terms of credit Hours, * **Input:** In terms of Utilized Man hours
- b) Due the utilization of additional man hours than required, the impact comes on the
Productivity i.e. Here observed almost 30% gap in the productivity.
- c) Getting delayed the output than required due to the variance & dependencies.
- d) Need to design better process to get the desired result in line with Safety, Good ergonomically, better stability & sustained optimized process.

Innovation & Automations:

- a) Reviewing the current assembly process in line with Process Structure, Safety, Ergonomics & Cost, it seems that there is needed to implement innovations through different automations.
- b) Automation or Innovations are leads to the drastic improvement in the Process, Cost & Work environment.
- c) Based on the Assembly scope there should, no need to make the high investment to make the automations or innovations
- d) Definitely after implementation of Low Cost automation or Any simple solution which leads to saves in the cost & manpower.

Cost Analysis:

- a) Any Process or activities, the cost plays major role. This parameters is indicates the Profit or Loss.
- b) In any Industry or Institutions Or Corporates the cost benefit is the key parameters & also one of the most Important KPI also.

c) Based on Assembly process analysis it looks the complication & ample of resource utilization against requirement.

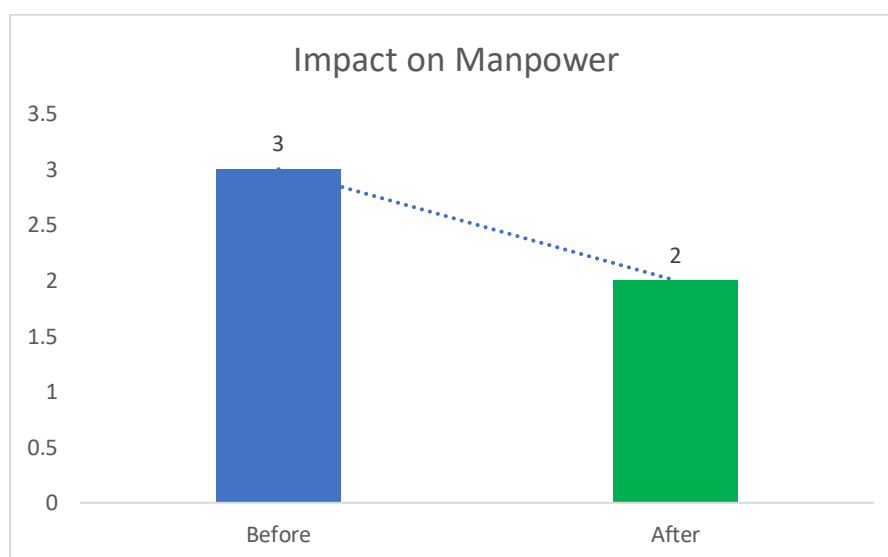
d) To reduce overall process cost need to think about “Low-Cost Automation” or think to “Best from Waste”

Findings:

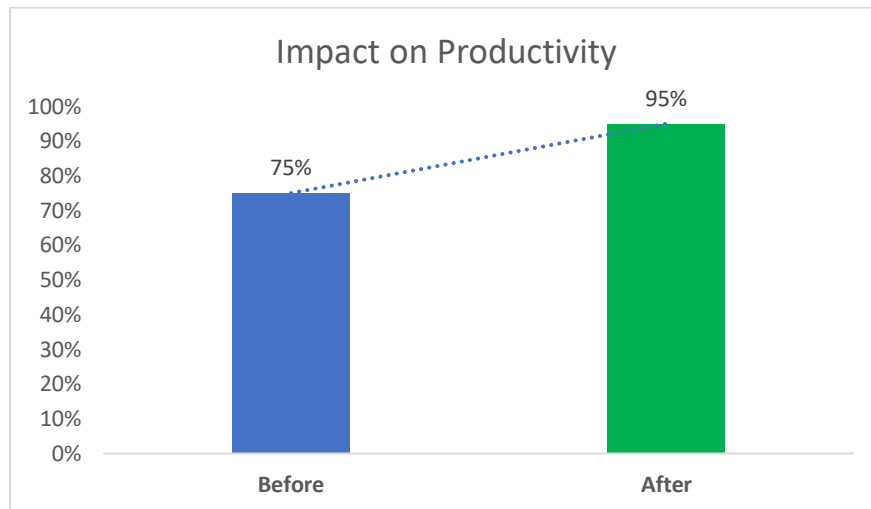
Sr. No.	Parameters	Before	After	Improvement (%)	Action Status
1	Manpower	3	2	33%	Implemented
2	Productivity	75%	95%	20%	Implemented
3	Process Cost	189	147	22%	Under Monitoring
4	Production Output	5	6	33%	Implemented
5	Delivery	5	6	33%	Implemented
6	Safety			Better Safety	Sustained
7	Ergonomics			Better Ergonomics	Sustained

Key Indicators (Findings):

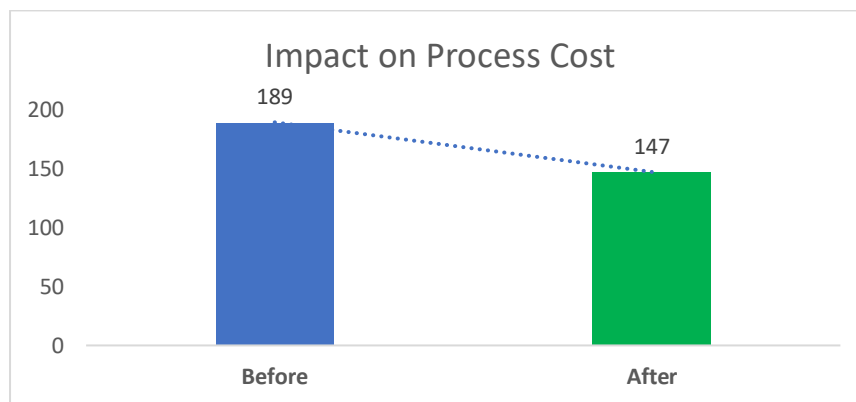
1) Manpower:



2) Productivity:



3) Process Cost:



Recommendations and Actions:

1) Cost Effective:

- 1) The suggested solution is most effective to perform the task & it will be helping to reach out up to the desired target.
- 2) General thought is to make the suggested equipment / mechanism through use of existing raw material i.e. “Best from Waste.”
- 3) It will be made at In-house by using In-house manufacturing equipment’s to minimization of manufacturing cost.
- 4) It will be always beneficial in case of physical trials & rectifications based on the Trial observations.

- 5) The recommended solution is cost effective from the Investment point of view & Series Assembly process too.

Conclusion: In conclusion, the study and implementation of safety mechanisms in the assembly process yield multifaceted benefits—optimizing operations, reducing costs, ensuring safety, and promoting efficiency. Embracing innovative external solutions enhances productivity, cost-effectiveness, and portability, offering a holistic transformation in assembly practices.

References:

1. *Mortada, Anass & Soulhi, Aziz. (2023). Improvement of Assembly Line Efficiency by Using Lean Manufacturing Tools and Line Balancing Techniques. Advances in Science and Technology Research Journal. 17. 89-109. 10.12913/22998624/169257.*
2. *Salimah, Shofi & Jufriyanto, Moh & Khaqiqi, M.Firman. (2021). Line Balancing Analysis of Hollow Dakota 1730 Manufacturing Process in PT XYZ. E3S Web of Conferences. 328. 05012. 10.1051/e3sconf/202132805012.*
3. *Jagdale, Ms Supriya Ramchandra, Mr Vikram Patil, and Rohan Dahivale. "ISHIKAWA DIAGRAM VERIFICATION FOR QUALITY AND PRODUCTIVITY IMPROVEMENT IN CONNECTOR ASSEMBLY." National Journal of Research In Marketing, Finance & HRM (2020): 9.*
4. *Rohan P Dahivale, M. H. (2020). Operational process improvement by eliminating rejections and avoiding scrap by implementing 'Poka-Yoke'. Our Heritage.*
5. *Ginting, Rosnani & William,. (2020). Assembly Line Balancing with Method Ranking Positional Weight (case study: XYZ Company). IOP Conference Series: Materials Science and Engineering. 1003. 012032. 10.1088/1757-899X/1003/1/012032.*

“A study on health and safety aspects for unlocking potential in workplace”- Review of Literature

Prof. Rupa Rawal (Assistant Professor – MITCOM, MIT ADT University)

Shrutika Shukla (Student, MITCOM, MIT ADT University)

Suhani Hyalij (Student, MITCOM, MIT ADT University)

Abstract:

There is an early phrase health is wealth, so is a happy worker a productive worker. The purpose of this study is to evaluate the importance of health and safety with reference to workplace environment. In a company, it is essential to motivate staff members in a variety of methods. In addition promoting a safe and healthy work environment, occupational health and safety system, non-occupational safety, as well activities conducted outside of the workplace plays pivotal role. This paper's primary goal is to examine how Occupational health and Safety (OHS) management affects the workplace and employees' health the employees, workers, and helpers working in various organisations at different levels. . The research helps in addressing health and safety aspects for unlocking potential in workplace.

Key words: *Occupational health, Safety, OHS Management*

Introduction: Occupational safety and health (OSH), a name for health and safety, is the body of laws, policies, and procedures that protect people's health, especially when they're working. Its main goal is to discover, evaluate, and control potential risks and hazards in order to prevent accidents, diseases, and injuries. Public health, occupational health, environmental health, workplace safety, and product safety are just a few sheltered in this discipline. Workplace safety addresses ergonomic concerns, creates emergency response plans, and guarantees that workers are working in safe environments with the appropriate tools, training, and protective gear. Occupational health covers the prevention of illness and stress management as well as the physical, emotional, and social well-being of employees. The primary goals of OSH programs are to safeguard employees' health and safety at work as well as the health and safety of coworkers, families, clients, and other individuals. Protecting people's health and safety in modern workplaces is a very important responsibility that falls under the purview of occupational safety and health (OSH). This research study includes a set

of procedures, laws, and standards that are carefully designed to protect people from a variety of possible risks and hazards, especially in work environments. It also try to minimise prevent mishaps, lessen injuries, and fight diseases by methodically identifying, evaluating, and controlling possible dangers. At the same time, occupational health takes centre stage, emphasizing employees' overall health in terms of their physical, mental, and social aspects. Key pillars in this field include sickness prevention and stress management techniques, highlighting the complexity of occupational safety and health.

Objective:

- 1) To Study health and safety aspects.
- 2) To understand the importance of happy workplace.

Research Methodology: A descriptive analysis of secondary data is used in a research paper to investigate the study on health and safety aspects in workplace. The research was reframed by insights got through articles, blogs, research references and a range of publications. The literature review has enhanced the study to frame the further study and explore the relationship between employer and employees

Review of Literature:

1. Employee wellness, which has occasionally been acknowledged as a significant area of welfare support on its own, is more than just health and safety. Safety hazards are elements of the work environment that have the potential to inflict immediate, sometimes serious injury on an employee. Cascio and Wayne (2008) Examples of these include electric shock, burns, sprains, bruises, broken bones, and loss of eyesight or hearing. Health hazards are those aspects of the job that can harm an employee's health over time, usually irreversibly. Examples of these include cancer, poisoning, and respiratory conditions. Risks to the body and biology, dangerous and cancer-causing materials and dusts, and hard work settings are frequently the cause. (Cole, 2009)
2. Research investigates the complex relationships that are thought to exist between corporate and employee outcomes and perceived workplace health and safety cultures. The study was done using data from self-reported employee health evaluations. The two climatic factors that are especially the focus of this study are perceived safety and perceived health and well- being. Reviewing the data reveals a clear correlation between physical exercise,

getting enough sleep, and feeling safe at work. Employees who have a strong sense of safety and well-being at work also report less depressive symptoms, greater job and life satisfaction, reduced back pain, and generally better general health. Furthermore, a positive workplace culture is linked too. (American Journal of Preventive Medicine (2019))

3. (Health Psychology Report, 2021) Study looks at the relationship between occupational stress, interpersonal conflict, intention to leave the field, and workplace health in the healthcare industry. It investigates the effects of working conditions—both public and private—as well as demographic characteristics on these variables. The findings show a significant and negative correlation between stress, interpersonal conflict, workplace health and safety, and intention to leave the company. Additionally, a positive correlation was discovered between interpersonal conflict, turnover intention, and stress. A thirty percentile of the difference in workplace health and safety may be related to factors such as intention to quit, amount of duties, education level, and job stress.

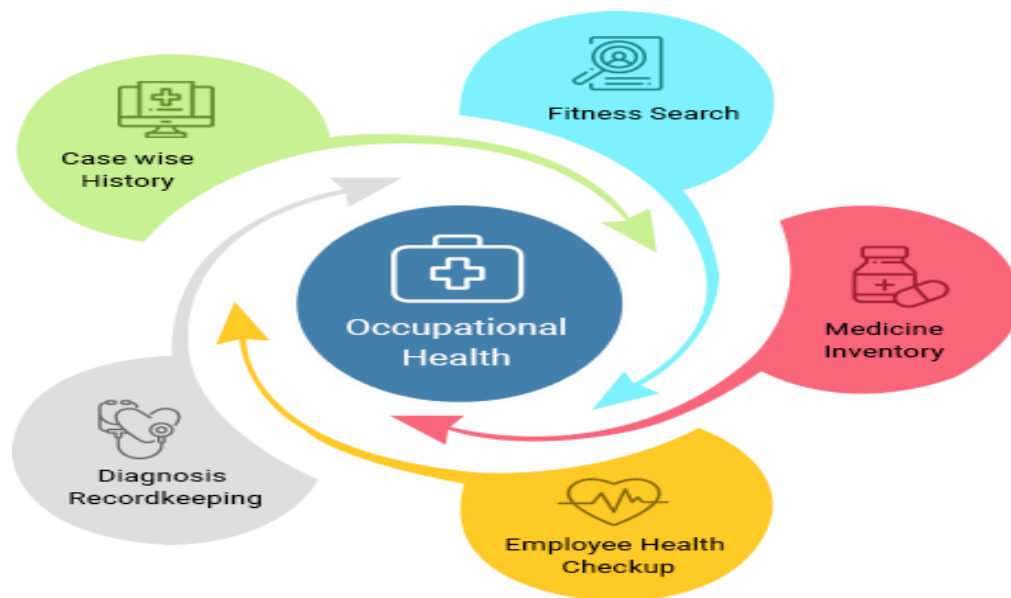
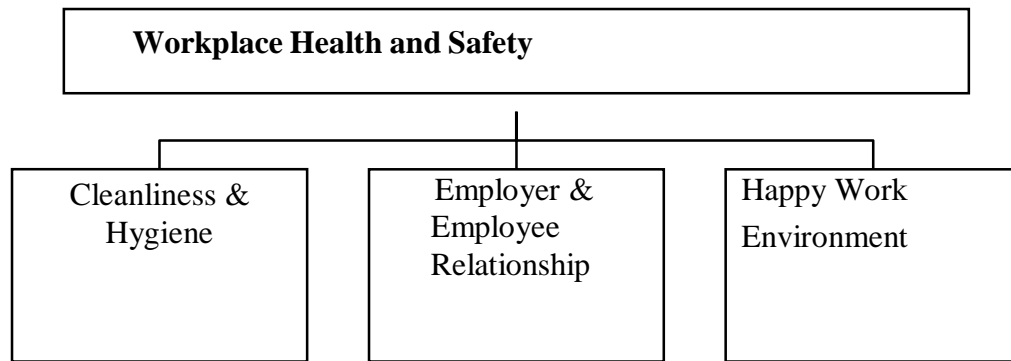
4 (Global Journal (2017) According to this study, workplace safety and health innovation must be combined in order to achieve sustainable development. These new pillars are presented by this lesson since previous study ignored cultural, political, and technical issues in favour of focusing primarily on the traditional pillars of the economy, social, and environment. Employing methods such as literature studies, industry observation, and employee interviews, the study explores the relationship between workplace safety and health advances and sustainable growth. The findings show that incorporating these three pillars into sustainable development programmes can lead to a reduction in accidents and occupational diseases. Additionally, the study outlines the positive effects of workplace safety and health innovation, including increased safety awareness, safer working environments, lower accident costs, regulated surroundings, and healthier people. The work outlines potential directions for future study on the three additional pillars and highlights the value of safety and health at work in promoting sustainable development.

5. (Journal of Practice and Education, 2016) This study addresses the crucial subject of staff health and safety education, focusing specifically on secondary education. As to the research, ensuring the safety of educators requires appropriate maintenance of equipment and adherence to health and safety laws. Unfortunately, many administrators disregard the recommendations of teaching staff when recommending safety measures, discouraging instructors from actively participating in their own safety. The study aims to understand

university teachers' perspectives on their duty to promote health and safety it also focuses on educators who work for higher education boards of management (BOM) and the Teachers Service Commission (TSC), as well as instructors, survey principles were to be followed, with a descriptive study methodology used.

6. In practical applications, mindfulness has been utilised increasingly frequently recently to increase worker safety, especially in sectors like construction and healthcare where worker safety is critical. In this review, we construct a theoretical model of safety and awareness by integrating prior research from many domains. Using data from 32 empirical studies, the conceptualization and operationalization of mindfulness and safety in the literature is first compiled and critically analysed. Next, we use the job demands-resources model to integrate empirical data with conceptual reasoning to develop a theoretical framework that links job demands related to safety with the basic benefits of mindfulness. Specifically, mindfulness relates to risk and hazard awareness and response at work, encourages more adaptable responses, improves focus and self-monitoring of safety behaviours in mentally demanding situations.(Journal of Organisational Behaviour,2023)

7. The employment dangers that informal domestic workers, such as babysitters, housekeepers, and carers, often overlook are explained in this article. Among the concerns are exposure to hazardous cleaning agents, an increased risk of ergonomic injuries, and limited access to medical treatment. The study identifies three primary factors that contribute to the poor health and safety conditions in domestic work: the intricate nature of care work, which is frequently made more difficult by close caregiving relationships, the long-standing exclusion from federal employment protections, and the tendency to disregard the home as a place of employment. (Occupational Safety and Health (2019)



Quality work



Workplace safety



Occupational health

Research Findings: The data and observations collected by the researcher provided a brief overview of Health and Safety aspects for unlocking potential in workplace address fundamental health, safety, and welfare concerns in workplaces, applying to most settings,

excluding construction sites, ships, and underground mines. Amendments needs to be made for developing more peer relationships and create happy working atmosphere.

Problem identified: Unlocking potential in the workplace is essential for businesses looking to develop and innovate. To maintain the sustainability of operations and the well-being of personnel, this effort must be balanced with a significant emphasis on health and safety issues.

Conclusions: Organisations may foster a positive work environment where people feel appreciated, inspired, and empowered to deliver their best work by placing a high priority on health and safety in addition to efforts to maximise potential. In addition to increasing creativity and productivity, this holistic approach promotes a culture of wellbeing and care that is advantageous to both the organisation and its members individually. Literature review has helped in understanding Real talent can only be reached by recognising and managing mental health concerns. Key actions in this regard include offering tools for stress management, encouraging work-life balance, and cultivating a wel-coming and inclusive atmosphere.

References:

1. Katz, A. S., Pronk, N. P., McLellan, D., Dennerlein, J., & Katz, J. N. (2019). *Perceived Workplace Health and Safety Climates: Associations With Worker Outcomes and Productivity*. *American Journal of Preventive Medicine*, 57(4). <https://doi.org/10.1016/j.amepre.2019.05.013>
2. Palanci, Y., Mengenci, C., Bayraktaroglu, S., & Emhan, A. (2021). *Analysis of workplace health and safety, job stress, interpersonal conflict, and turnover intention: A comparative study in the health sector*. *Health Psychology Report*, 9(1). <https://doi.org/10.5114/hpr.2020.99971>
3. Jilcha, K., & Kitaw, D. (2017). *Industrial occupational safety and health innovation for sustainable development*. *Engineering Science and Technology, an International Journal*, 20(1). <https://doi.org/10.1016/j.jestch.2016.10.011>
4. Katunge, G., English, J., Teacher, L., Girls, M., School, H., Wahu, R., & Dean, M. (2016). *Maintaining Health and Safety at Workplace: Employee and Employer's Role in Ensuring a Safe Working Environment*. *Journal of Education and Practice*, 7(29).
5. Liu, Z., Hoff, K., Baranski, E., Snyder, G., Flin, R., Lindner, P., & Spitzmueller, C. (2023). *Mindfulness and workplace safety: An integrative review*. *Journal of*

- Organizational Behavior*, 44(8). <https://doi.org/10.1002/job.2705>
6. Hope O, Wang Yue H, Zhao Z: Year 2022: Information Quality and workplace Safety: *Journal of management Accounting Research* (2022) 34(1)
 7. Sedani, A., Stover, D., Coyle, B., & Wani, R. J. (2019). Assessing workplace health and safety strategies, trends, and barriers through a statewide worksite survey. *International Journal of Environmental Research and Public Health*, 16(14). <https://doi.org/10.3390/ijerph16142475>
 8. Theodore, N., Gutelius, B., & Burnham, L. (2019). Workplace Health and Safety Hazards Faced by Informally Employed Domestic Workers in the United States. *Workplace Health and Safety*, 67(1). <https://doi.org/10.1177/2165079918785923>

Role of Analytics and Machine Learning in Vendor Evaluation and Profitability of Food Industry Firms: A Quantitative Investigation

Mr.Dnyanaeshwar Hirachand Ghuge

Research Scholar SIMCA

Dr.Yogesh Wasudeo Bhowte

Research Guide SIMCA

Abstract

In order to evaluate vendors and maintain profitability, food sector companies rely heavily on analytics and machine learning. Companies may evaluate a vendor's performance by using modern data analytics to measure important aspects including cost effectiveness, consistency in quality, and timeliness of delivery. Proactive vendor management and risk reduction are made possible by machine learning algorithms that analyze and forecast future problems based on patterns and past data. By anticipating demand, cutting waste, and improving inventory management, machine learning models maximize supply chain operations through profitability. Businesses may make data-driven decisions that increase revenue and cut expenses by using predictive analytics, which offers insights into consumer preferences, market trends, and price optimization tactics. Moreover, vendor relationships and product offerings are enhanced through sentiment analysis of client input. Ultimately the combination of analytics and machine learning improves strategic planning, operational effectiveness, and decision-making, which improves vendor selection and boosts profitability. 201 respondents were considered in the study as a sample size. Mean and T-test was applied in the study to find the outcome.

Keywords: Food sector, Machine learning, Vendor evaluation, Supply chain optimization, Predictive analytics, Sentiment analysis, Profitability

Introduction

Analytics and machine learning together are transforming vendor evaluation and profitability in the fast-paced, highly competitive food business. These cutting-edge solutions help businesses make data-driven decisions that optimize supply chains and raise overall productivity. Through extensive data analysis, businesses are able to predict demand, evaluate vendor performance, and spot market trends. Inventory management is improved

and risks are reduced with the use of machine learning models, which offer predictive insights. Adoption of these technologies ultimately increases profitability and expedites the vendor selection process, putting businesses in a position to prosper in a constantly changing environment. Analytics has played a key role in changing the way the food business evaluates vendors. Data analytics offers a methodical way to assess vendor performance, as mentioned by Sharma et al. (2020). This enables businesses to closely examine important parameters including "delivery reliability," "product quality," and "cost efficiency." Businesses evaluated past performance trends and identified opportunities for development by utilizing extensive databases. With the help of this data-driven assessment, companies were able to uphold strict standards throughout their supply chains and strengthen their bonds with dependable suppliers.

The food industry's supply chain management was transformed by machine learning, which improved waste reduction, "inventory management," and demand forecasting. Hemachandran et al. (2022) assessed how machine learning algorithms analyzed data in real-time to forecast demand patterns with exceptional precision, allowing businesses to modify their stock levels correspondingly. This feature decreased the number of overstocking and stockouts, which minimized waste and improved the use of resources. Wang et al. (2022) focused on the use of "machine learning" to forecast and monitor "food safety," emphasizing the crucial part that it plays in "vendor evaluation." In order to determine possible threats to food safety linked with various vendors, machine learning algorithms are capable of processing and analyzing large, complicated datasets. With the strict regulatory framework and the high stakes surrounding food safety, this capability is especially valuable for food sector enterprises in India.

Profitability in the food business was greatly increased by the strategic application of analytics and machine learning. Driving revenue development and cost efficiency, Dora et al. (2022) highlighted that "artificial intelligence and machine learning applications played a critical role in strategic decision-making processes." Through extensive dataset analysis, businesses were able to pinpoint lucrative market niches, enhance their pricing tactics, and focus their marketing campaigns on target demographics. Businesses were able to improve their services and increase customer loyalty by using sentiment analysis on consumer comments to gain insights into areas for improvement and product satisfaction. The optimization of supply chain processes was made easier by machine learning models, which guaranteed that goods were delivered to customers "efficiently and cost-effectively."

Businesses were able to optimize profits, cut expenses associated with operations, and preserve a competitive edge in the dynamic Indian food sector through the strategic application of analytics and machine learning.

Literature Review

The use of "analytics and machine learning" (ML) has drastically changed vendor evaluation procedures in the Indian food business. In the past, selecting vendors was mostly based on subjective biases and labor-intensive, traditional assessment techniques. But with the development of big data analytics and machine learning, businesses could use enormous volumes of data to make more objective and well-informed judgments. Technological improvements have played a major role in driving "sustainable innovations" in the food sector, as noted by Sharma et al. (2021). Organizations could now forecast future performance patterns and make data-driven decisions that increased efficiency and decreased risks by evaluating data on vendor performance, quality control, and delivery schedules. According to Maheshwari et al. (2021), "Big Data Analytics" (BDA) plays a critical role in supply chain management, helping businesses cut expenses and optimize operations. Businesses should improve profit margins by making well-informed judgments by evaluating consumer behavior, market trends, and inefficiencies in the supply chain. The adoption of big data analytics has been a driving force behind the food industry's shift to a circular economy and sustainable operations management.

According to Chakraborty et al. (2023), integrating many data sources into a coherent analytics framework is a major challenge. Businesses frequently struggled with data quality and uniformity, which is essential for precise analysis and training machine learning models. Furthermore, there was an urgent demand for knowledgeable experts who could successfully manage the complexity of big data analytics and produce insightful findings. Even with these difficulties, more businesses were encouraged to invest in these technologies because of the significant potential rewards. It was anticipated that as the industry developed, more advanced methods and instruments would surface, improving the accuracy and effectiveness of vendor assessment and profitability analysis in the Indian food industry. This continuous progress offered businesses not only better financial results but also increased operational resilience and sustainability. Charles et al. (2023) asserts that the integration of "data analytics and business intelligence frameworks" is essential. Businesses can learn more about "risk factors," "quality metrics," and "vendor performance" by utilizing huge datasets. By enabling more precise "vendor selection," this data-driven strategy lowers the possibility of supply chain interruptions.

According to Sharma and Joshi (2023), "digital supplier selection" has a positive effect on "supply chain quality management systems," which in turn improves firm performance. They showed that using digital tools for "supplier evaluation" increased "quality management" consistency and enhanced efficiency. Businesses that used these digital assessment techniques saw a significant increase in profitability and operational effectiveness. Businesses could make more informed judgments by doing a more thorough assessment of "supplier capabilities" through the use of machine learning algorithms and advanced analytics.

According to Rakhra et al. (2022), machine learning algorithms are capable of analyzing large datasets in order to evaluate vendor performance, quality, and reliability more accurately. Businesses may forecast future performance by using historical data, guaranteeing a steady supply of high-quality goods. This change improved overall operational efficiency in the cutthroat Indian market by streamlining the vendor selection process and reducing the risk of supply chain disruptions. Big data analytics has had a major effect on Indian food industry companies' profitability. According to Singh et al. (2024), businesses used a "fuzzy analytical hierarchical process" to accept and analyze big data more effectively, opening up new avenues for improving financial performance. Businesses could find opportunities for cost savings, enhance resource allocation, and streamline operations by mining data from several sources. Predictive analytics, for example, let businesses anticipate demand more precisely, which decreased overproduction and wasted resources. Furthermore, by examining customer behavior and industry trends, machine learning algorithms aided in the identification of pricing strategies that optimized profit margins.

According to Kazancoglu et al. (2021), "Big Data Analytics" made it easier to optimize food supply chains, which in turn promoted sustainability. Businesses might cut waste, lower energy use, and improve resource use by using data to pinpoint inefficiencies and opportunities for development. This improved the operations' resilience and environmental friendliness while also saving money and contributing to global sustainability goals. Thus, the incorporation of BDA into supply chain management was essential in promoting the food industry's sustainable growth in India. The application of machine learning and big data analytics in the food business is fraught with difficulties, despite the potential rewards. Key "challenges and opportunities" in managing India's agri-fresh food supply chains were recognized by Kumar and Agrawal (2023), including problems with data quality, integration, and standardization. Numerous businesses have challenges related to the variety of data sources and the scarcity of knowledgeable experts who can fully utilize these technologies. In

order to fully realize the advantages of analytics and machine learning, it will be imperative to tackle these difficulties as the sector develops.

The relationship between "artificial intelligence" and the agri-food sector was examined by Rejeb et al. (2022), who emphasized the revolutionary potential of these technologies. They stressed that by offering real-time insights and predictive analytics, AI-driven analytics might greatly improve "vendor evaluation processes". Artificial intelligence (AI) systems can examine enormous volumes of data from numerous vendors in the Indian food sector to spot patterns and trends that are not immediately obvious using more conventional techniques. Raman et al. (2018) focused on how "big data" is affecting supply chain management more broadly and how it has important ramifications for "vendor evaluation." They contended that a comprehensive supply chain perspective could be obtained through big data analytics, allowing businesses to assess providers using an extensive range of performance metrics.

Study's Objectives

1. To know the Role of Analytics and Machine Learning in Vendor Evaluation and Profitability of Food Industry Firms.
2. To ascertain how Analytics and Machine Learning impact Vendor Evaluation and Profitability of Food Industry Firms.

Methodology of the Study

Nature of study is empirical. 201 is the sample size. Structured questionnaire was prepared to collect the data. Mean and t-test was applied to find the outcome of research. Convenience sampling is the method of sampling.

Result of Demographics

Table 1. Show respondent's gender details, 58.21% are male, and 41.79% are female. Looking at the Age of respondents, 30 – 35 years are 38.31%, 35 – 40 years are 27.36%, and those who are above 40 years are 34.33%. With regards to Status of Vendors, Small scale vendors are 54.73%, and large-scale vendors are 45.27%.

Table1. Details of Participants

Variables	Number of Respondents	%
Gender		
Male	117	58.21
Female	84	41.79
Total	201	100
Age		
30 – 35 years	77	38.31
35 – 40 years	55	27.36
Above 40 years	69	34.33
Total	201	100
Status of Vendors		
Small scale vendors	110	54.73
Large scale vendors	91	45.27
Total	201	100

Table2. Role of Analytics and Machine Learning in Vendor Evaluation and Profitability of Food Industry Firms

Serial No.	Statement of Survey	Mean	T-Value	Sig.
1.	Investing in training programs for employees to effectually use such technologies can maximize their possible benefits	4.21	17.456	0.000
2.	Machine learning algorithms can analyse historical data to recognize trends and patterns in vendor performance	4.09	15.825	0.000
3.	Machine learning models can forecast probable	4.23	18.142	0.000

	risks related with vendors, like supply chain disruptions, financial instability, or quality issues			
4.	Analytics can pretend various situations to assess how different vendors might perform under different situations	4.17	16.909	0.000
5.	Machine learning algorithms can analyse customer data to deliver tailored marketing messages and offers	4.00	14.689	0.000
6.	Machine learning can predict prices of raw material and help firms choose vendors offering the best value	4.27	18.341	0.000
7.	Analytics tools can provide insights into spending patterns and recognize opportunities for cost savings	4.13	16.473	0.000
8.	It can predict future sales from historical data, trends of market, and other variables, assisting firms enhance inventory levels and reduce waste	3.17	2.489	0.007
9.	Analytics can identify seasonal trends and consumer likings, letting firms to adjust their offerings and stock levels accordingly	3.23	3.327	0.001
10.	Machine learning can improve resource allocation in production processes, ensuring that labor, materials, and equipment are used proficiently	4.33	19.577	0.000

Table 2. Shows mean value of “Role of Analytics and Machine Learning in Vendor Evaluation and Profitability of Food Industry Firms” the first statement is Investing in training programs for employees to effectually use such technologies can maximize their possible benefits with the mean value of 4.21, Machine learning algorithms can analyze historical data to recognize trends and patterns in vendor performance is the second statement with the mean value of 4.09, Machine learning models can forecast probable risks related with vendors, like supply chain disruptions, financial instability, or quality issues has got the mean value of 4.23, next statement is Analytics can pretend various situations to assess how different vendors might perform under different situations scored the mean value of 4.17. Fifth statement in the study is Machine learning algorithms can analyze customer data to deliver tailored marketing messages and offers with the mean score of 4.00, next statement is Machine learning can predict prices of raw material and help firms choose vendors offering the best value has scored the mean of 4.27, next statement is Analytics tools can provide insights into spending patterns and recognize opportunities for cost savings with the mean value of 4.13, eighth and ninth statement are It can predict future sales from historical data, trends of market, and other variables, assisting firms enhance inventory levels and reduce waste (mean 3.17), and Analytics can identify seasonal trends and consumer

likings, letting firms to adjust their offerings and stock levels accordingly (mean 3.23). Last and tenth statement is Machine learning can improve resource allocation in production processes, ensuring that labor, materials, and equipment are used proficiently scored the mean value of 4.33. T-value of survey statements in context of Role of Analytics and Machine Learning in Vendor Evaluation and Profitability of Food Industry Firms are identified as significant as t-value of all statements are positive and significant as significant value is less than 0.05.

Conclusion

To sum up, machine learning (ML) and analytics are critical to improving vendor assessment procedures and increasing profitability for Indian food industry companies. Through the utilization of sophisticated analytics methodologies and machine learning algorithms, organizations can proficiently examine extensive datasets to assess supplier performance, detect patterns, and arrive at well-informed judgments. Businesses may reduce the risk of supply chain disruptions, maximize inventory management, and foresee changes in demand with predictive analytics. Additionally, automated vendor performance monitoring can be made possible by ML models, allowing procurement tactics to be changed in real time. Furthermore, companies in the food sector can find ways to save costs, improve pricing tactics, and boost overall operational effectiveness by utilizing data-driven insights. This ultimately leads to increased market competitiveness and profitability. Furthermore, businesses may stay ahead of the competition by quickly adapting to changing consumer preferences and market dynamics thanks to the integration of analytics and machine learning. Overall, the combination of analytics and machine learning transforms the way that companies in the food sector in India evaluate potential vendors. This increases their productivity, flexibility, and profitability while setting them up for long-term success in a market that is becoming more and more dynamic. T-value of survey statements in context of Role of Analytics and Machine Learning in Vendor Evaluation and Profitability of Food Industry Firms are identified as significant as t-value of all statements are positive and significant as significant value is less than 0.05.

References

1. *Sharma, R., Kamble, S. S., Gunasekaran, A., Kumar, V., & Kumar, A. (2020). A systematic literature review on machine learning applications for sustainable*

- agriculture supply chain performance. Computers & Operations Research, 119, 104926.*
2. Hemachandran, K., Khanra, S., Rodriguez, R. V., & Jaramillo, J. (Eds.). (2022). *Machine Learning for Business Analytics: Real-Time Data Analysis for Decision-Making. CRC Press.*
 3. Dora, M., Kumar, A., Mangla, S. K., Pant, A., & Kamal, M. M. (2022). *Critical success factors influencing artificial intelligence adoption in food supply chains. International Journal of Production Research, 60(14), 4621-4640.*
 4. Sharma, S., Gahlawat, V. K., Rahul, K., Mor, R. S., & Malik, M. (2021). *Sustainable innovations in the food industry through artificial intelligence and big data analytics. Logistics, 5(4), 66.*
 5. Singh, J., Kumar, R., Kumar, V., & Chatterjee, S. (2024). *Exploring the dynamics of bigdata adoption in the Indian food industry with fuzzy analytical hierarchical process. British Food Journal.*
 6. Chakraborty, D., Rana, N. P., Khorana, S., Singu, H. B., & Luthra, S. (2023). *Big data in food: Systematic literature review and future directions. Journal of Computer Information Systems, 63(5), 1243-1263.*
 7. Rakhra, M., Bhargava, A., Bhargava, D., Singh, R., Bhanot, A., & Rahmani, A. W. (2022). *Implementing machine learning for supply-demand shifts and price impacts in farmer market for tool and equipment sharing. Journal of Food Quality, 2022.*
 8. Maheshwari, S., Gautam, P., & Jaggi, C. K. (2021). *Role of Big Data Analytics in supply chain management: current trends and future perspectives. International Journal of Production Research, 59(6), 1875-1900.*
 9. Kazancoglu, Y., Ozbiltekin Pala, M., Sezer, M. D., Luthra, S., & Kumar, A. (2021). *Drivers of implementing Big Data Analytics in food supply chains for transition to a circular economy and sustainable operations management. Journal of Enterprise Information Management.*
 10. Kumar, A., & Agrawal, S. (2023). *Challenges and opportunities for agri-fresh food supply chain management in India. Computers and Electronics in Agriculture, 212, 108161.*
 11. Charles, V., Garg, P., Gupta, N., & Agarwal, M. (Eds.). (2023). *Data Analytics and Business Intelligence: Computational Frameworks, Practices, and Applications. CRC Press.*

12. Sharma, M., & Joshi, S. (2023). *Digital supplier selection reinforcing supply chain quality management systems to enhance firm's performance. The TQM Journal, 35(1), 102-130.*
13. Rejeb, A., Rejeb, K., Zailani, S., Keogh, J. G., & Appolloni, A. (2022). *Examining the interplay between artificial intelligence and the agri-food industry. Artificial intelligence in agriculture, 6, 111-128.*
14. Wang, X., Bouzembrak, Y., Lansink, A. O., & van der Fels-Klerx, H. J. (2022). *Application of machine learning to the monitoring and prediction of food safety: A review. Comprehensive Reviews in Food Science and Food Safety, 21(1), 416-434.*
15. Raman, S., Patwa, N., Niranjana, I., Ranjan, U., Moorthy, K., & Mehta, A. (2018). *Impact of big data on supply chain management. International Journal of Logistics Research and Applications, 21(6), 579-596.*

A Study on Employee Safety and Welfare and Welfare Measures At XPRO India Ltd, Pune

Mr.Dnyaneshwar Hirachand Ghuge

Dnyaneshwarghuge10@gmail.com

Dr.Yogesh W Bhowte

Professor & Research Guide

Sinhgad Institute of Management and computer Applications Narhe

Abstract:

This is research conducted on HSW Measures (Health, Safety and Welfare) that are followed at XPRO INDIA LIMITED which is basically a manufacturing company in today's corporate world Welfare of the employees Health of the employees and Safety of the employees are very much important and it also benefits the company and increases the productivity. Factories Act 1948 gives detailed information with regard to Employees Health, Safety and Welfare measures that a Factory should follow. For a company to be successful, employee's satisfaction towards HSW are the key aspects. The satisfaction among employees depicts whether they are happy with the current policies followed by the company. The primary data is collected from the employees and analysed

Key words: health, safety ,benefits productivity etc

Introduction:

The success of any manufacturing company will be based on the workers, employees will be considered as an asset to the organization. Any slight damage caused to the employee within the premises will lead to major effects. This topic was chosen because, as it is a manufacturing company, the chances of accidents are more. Even a small negligence may lead to high impacts and dangerous consequences. From this survey, it was understood that very few accidents are met in the company premises and almost all employees are aware of the HSW measures that the company is following. As per the overall response of the employees, they are very much satisfied with the policies and practices followed by Xpro India Limited in order to protect their employees and safeguard them.

The study was conducted in XPRO India Ltd., Pune to find the effect of HSW measures of employees at workplace.

The research was conducted in order to check satisfaction level of the employees on the measures taken by the company and how they boost the employee's morale.

This study indicates the satisfaction among the employees with regarding to HSW measures.

Objectives of the Project

1. Understanding measures followed by Xpro India Ltd with respect to Health, Safety and Welfare
2. To evaluate the employee satisfaction with regards to HSW
3. To analyse if HSW affects efficiency positively

Need for study

To measure the HSW [Health measures safety measures and welfare measures] of the employees of Xpro India Limited.

Scope

1. This study is on measures followed at Xpro India Limited, Ranjangaon plant for employees, with regards to Health, Safety and Welfare
2. There are 1013 employees at the Ranjangaon plant of which the researcher interviewed 100 employees across designations from General Manager to Officers to technicians to apprentices.

Limitations

1. The study was limited to Xpro Ranjangaon Plant only and the survey was done in a 10 week of limited time period
2. Sample size taken was 100 samples and it may not represent the whole population, as sample size was 10% of the overall population at Xpro Ranjangaon Plant due to time constraints
3. Employees may not have given the right answers for the questionnaire because he does not want to be unfavourable to the organization
4. The employees may have got influenced from their peers and may have answered as same as them.

Secondary sources information may not be accurate as it may not be updated

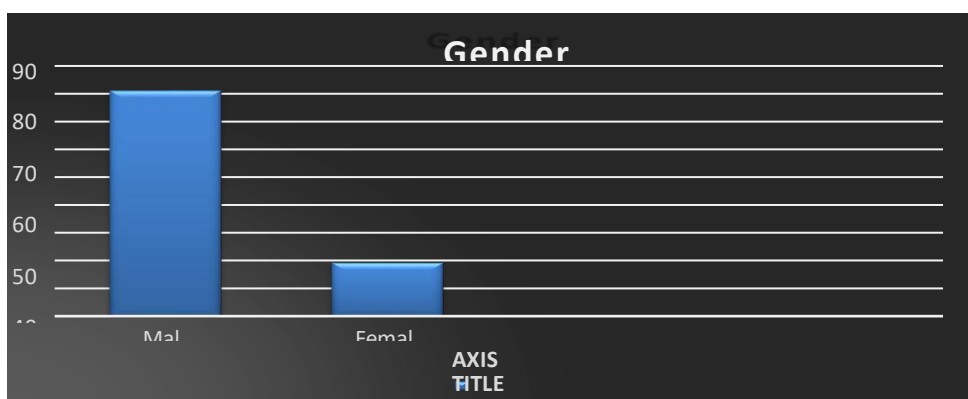
Deliberate sampling or non-probability sampling is used in which selection of particular unit of the universe for constituting sampling which represents the universe.

Sample Size: A sample size of 100 employees was taken

Data Analysis & Interpretation

Demographic details of the employees

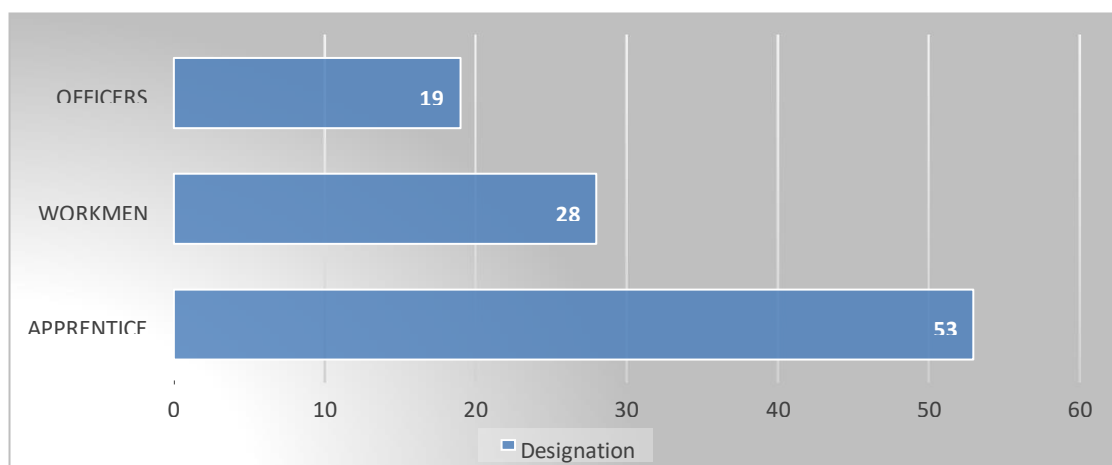
1. Gender



	<u>MALE</u>	<u>FEMALE</u>
<u>No of respondents</u>	<u>81</u>	<u>19</u>

Interpretation : As Xpro is a manufacturing sector, Male employees are more in number when compared to Female employees. Female employees are more found in Admin departments and very less in shop floor.

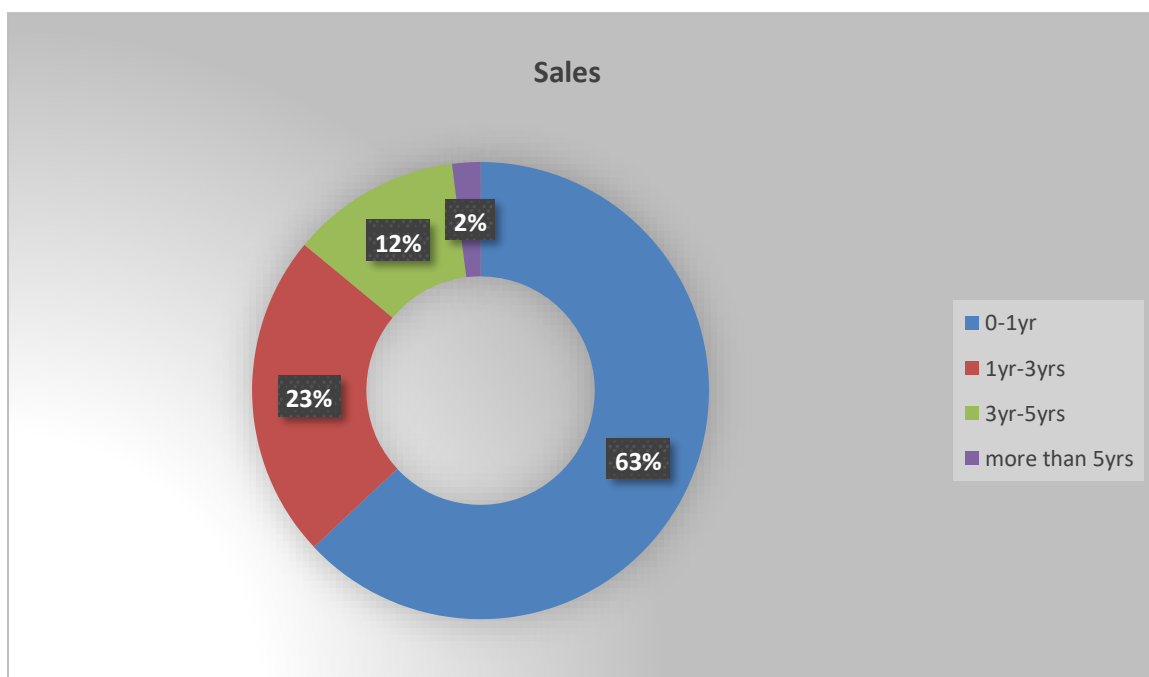
2. Designation



<u>Designation</u>	Apprentice	Workmen	Officers
No of respondents	53	28	19

Interpretation : As the survey is based on Health, Safety and Welfare measures of the employees, responses were mostly collected from Apprentice and Workmen when compared to Officers because Apprentice and Workmen are the employees who are working on machinery and not officers

3.Work Experience



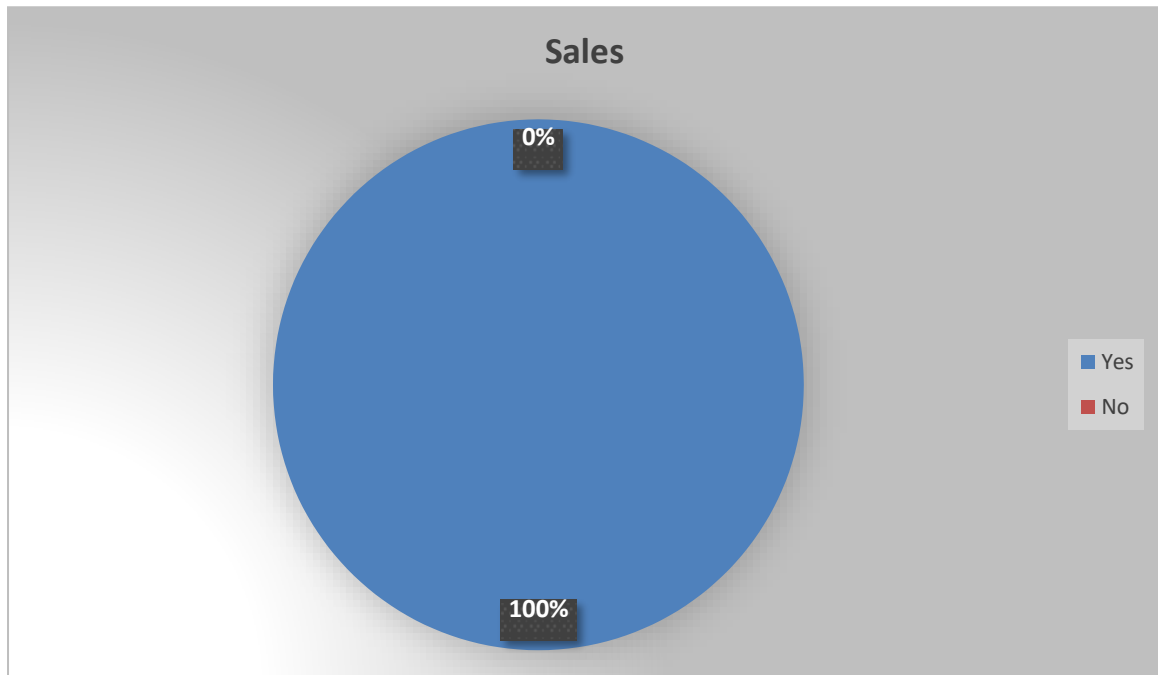
<u>Experience</u>	0-1yr	1yr-3yrs	3yr-5yrs	More than5yrs
No of respondents	63%	23%	12%	2%

Interpretation : As most of them are Apprentice among the respondents, apprenticeship is for one year.Hence the highest percentage is 0-1year.

Health Measures

The second part of the questionnaire is regarding the healthmeasures that are followed at Xpro

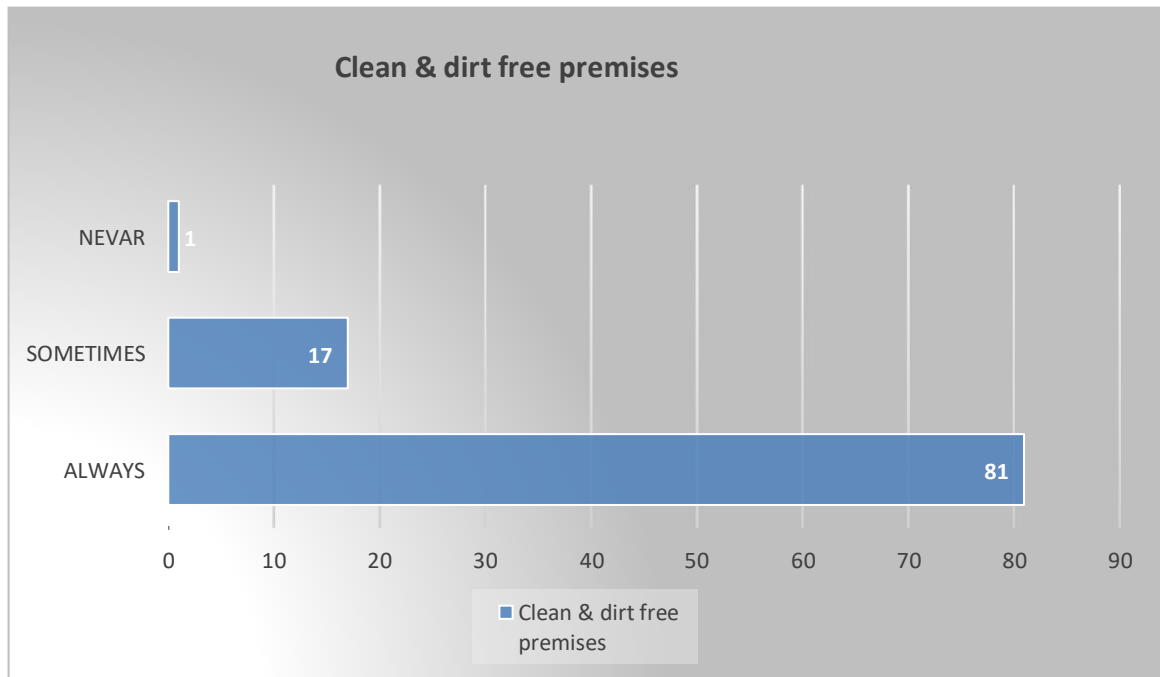
1. Does your company ensure good Health of the employees?



<u>Health measures</u>	Yes	No
No of respondents	100%	0%

Interpretation : Xpro gives a lot of importance to Health of the Employees, and they keep a regular check on Employee’s Health. Hence, not even single respondent said ‘no’ to the abovequestion.

2.Does your company have cleaned and dirt-free premises?



<u>Clean & dirt-free premises</u>	Always	Sometimes	Never
No of respondents	81	17	1

Interpretation : Xpro is very much careful about cleanliness in the factory premises. But is obvious to find 100% in the shop floor and that is why some of them have voted for sometimes and never

3.Are you provided with training before working on dangerous machinery?

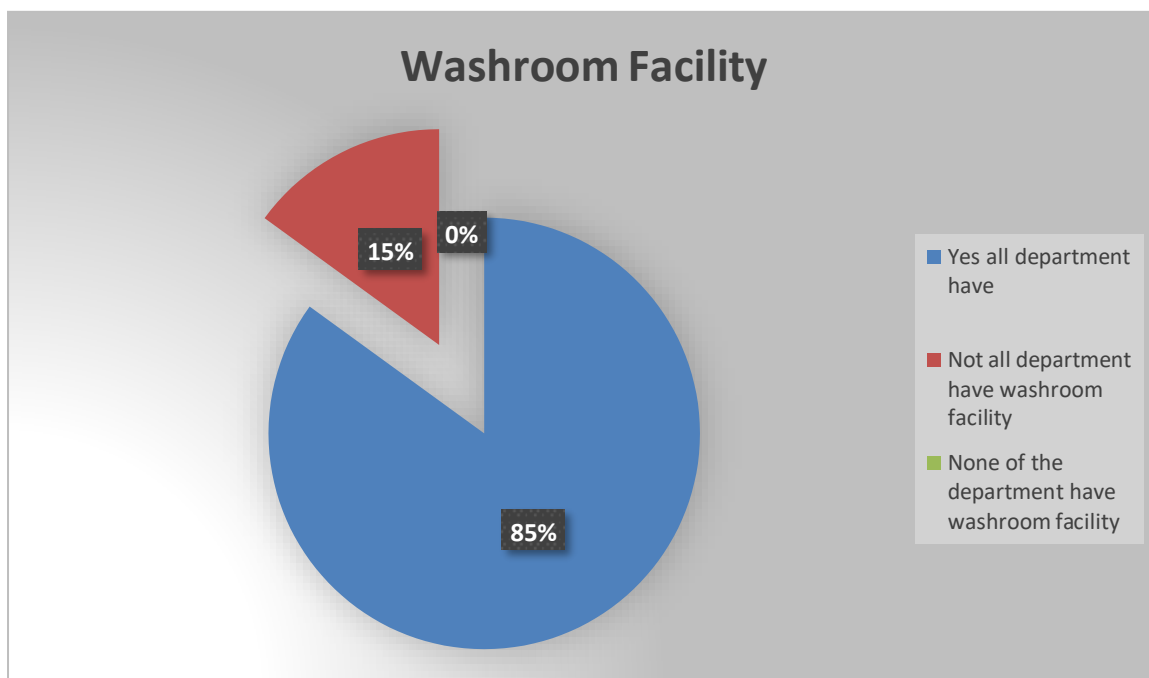


Training	Yes	No
No of respondents	89%	11%

Interpretation

No special training classes are conducted at Xpro, but workers are taught how to work with the dangerous machineries. But no training classes are conducted

4.Does every department in the factory has washroom facilities?



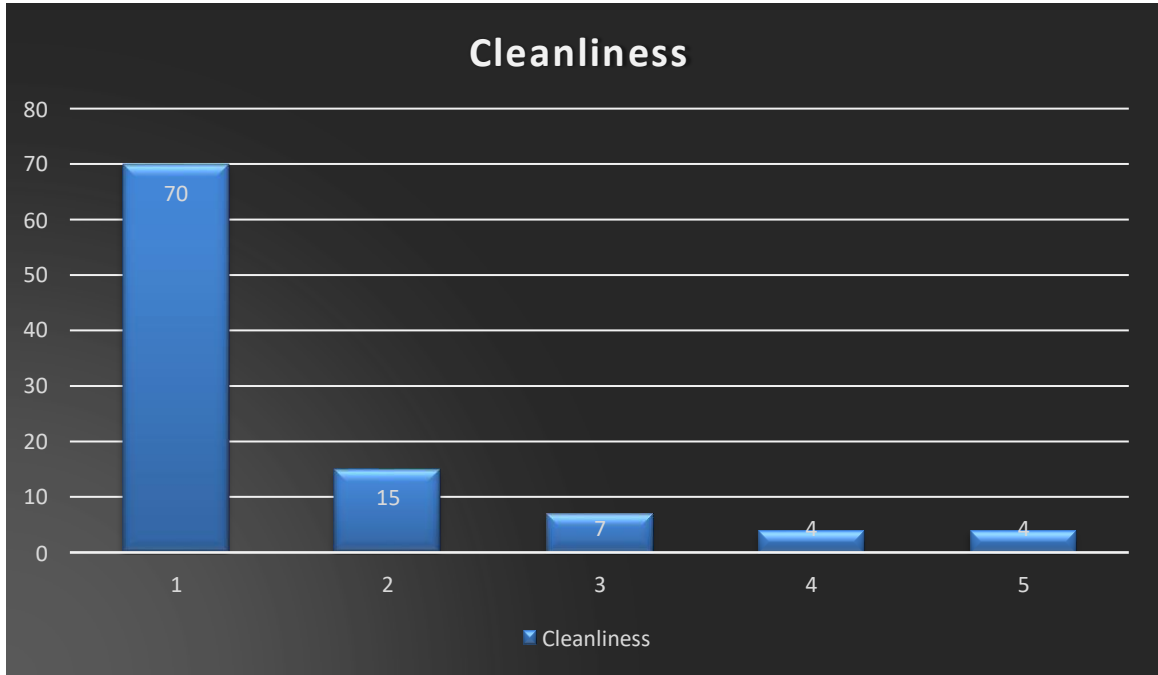
<u>Washroom Facility</u>	Yes, all Department have	Not all Department have washroom facility	None of the department have washroom facility
No of respondent	85%	15%	0%

Interpretation

When this survey was conducted, it was found that all departments are not provided with washrooms. It is also surprising that not all employees know the fact that no washrooms are there in some departments such as purchase, stores etc.

5.How do you rate the following aspects followed at Xpro from 1-5, 1 beingbest and 5 being worst?

a. Cleanliness

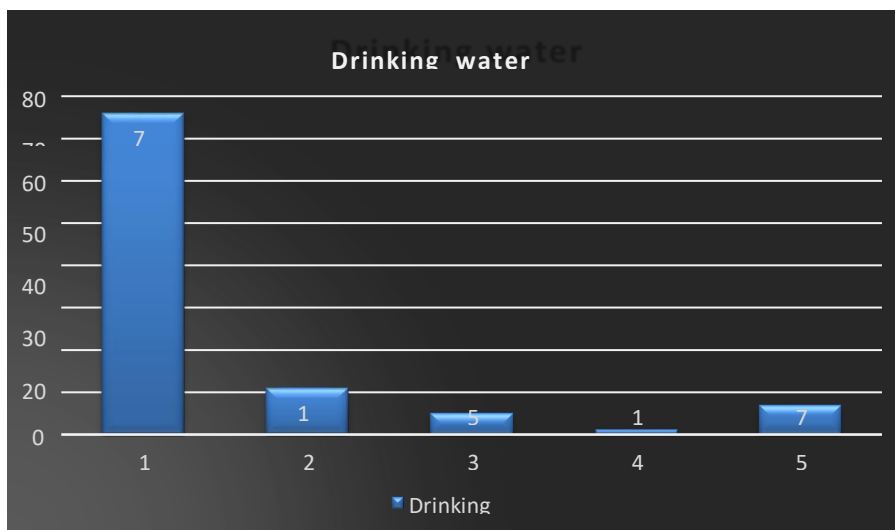


<u>Cleanliness</u>	1	2	3	4	5
No of respondent	70	15	7	4	4

Interpretation

As mentioned in above questions, Cleanliness is given very much important and is verywell maintained

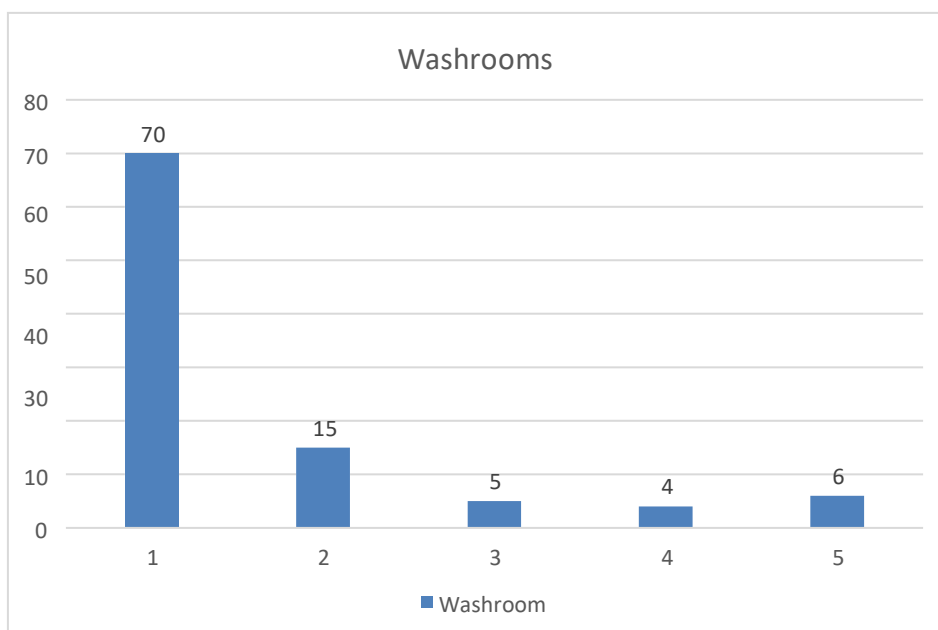
b. Drinking Water



Drinking Water	1	2	3	4	5
No of respondent	76	11	5	1	7

Interpretation : Water facilities are provided almost in all the departments and in all the floors. Apprentice trainees have their classes and, in their classrooms, they do not have drinking water facility.

c. Washrooms



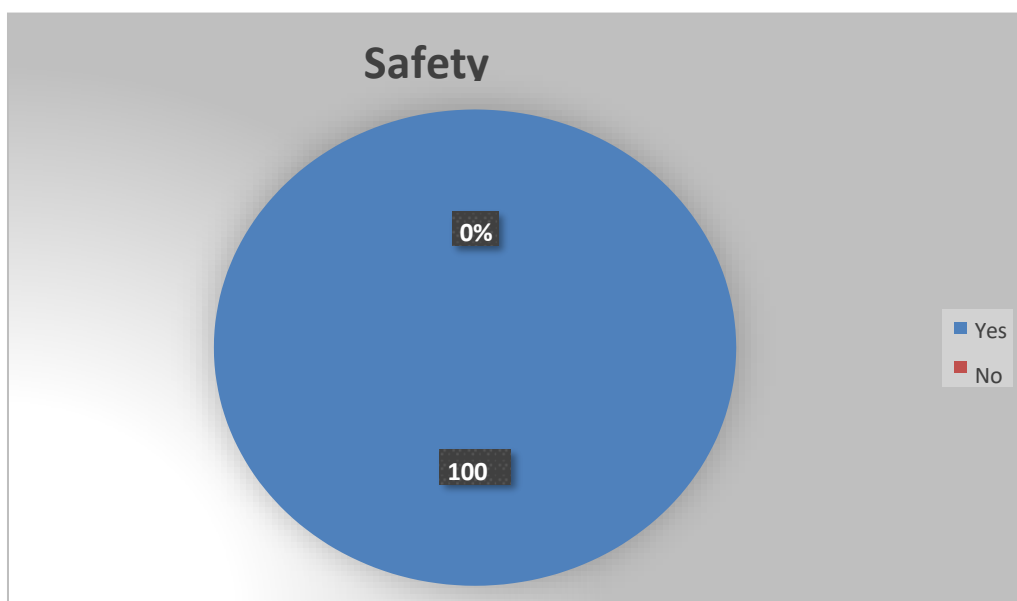
Washroom	1	2	3	4	5
No of respondents	70	15	5	4	6

Interpretation :

Washrooms are provided in almost all the departments. Some departments like Stores,Purchases do not have washroom facility and they will have to go to the nearby department which has washroom facility

SAFETY MEASURES

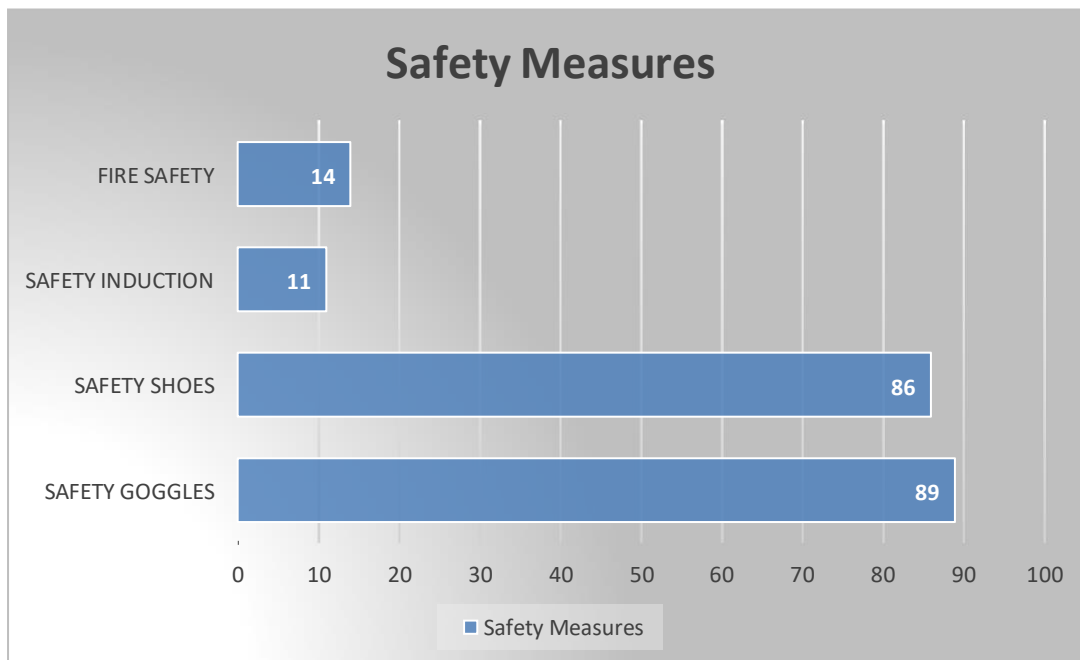
1. Does your company follow any safety measures?



Safety Measures	Yes	NO
No of respondents	100%	0%

Interpretation : Xpro follows safety measures very strictly. Safety of the employees is very much important for the Company

2. If your answer for first question is Yes, mention any two Safety Measures that is followed at Xpro India Limited?

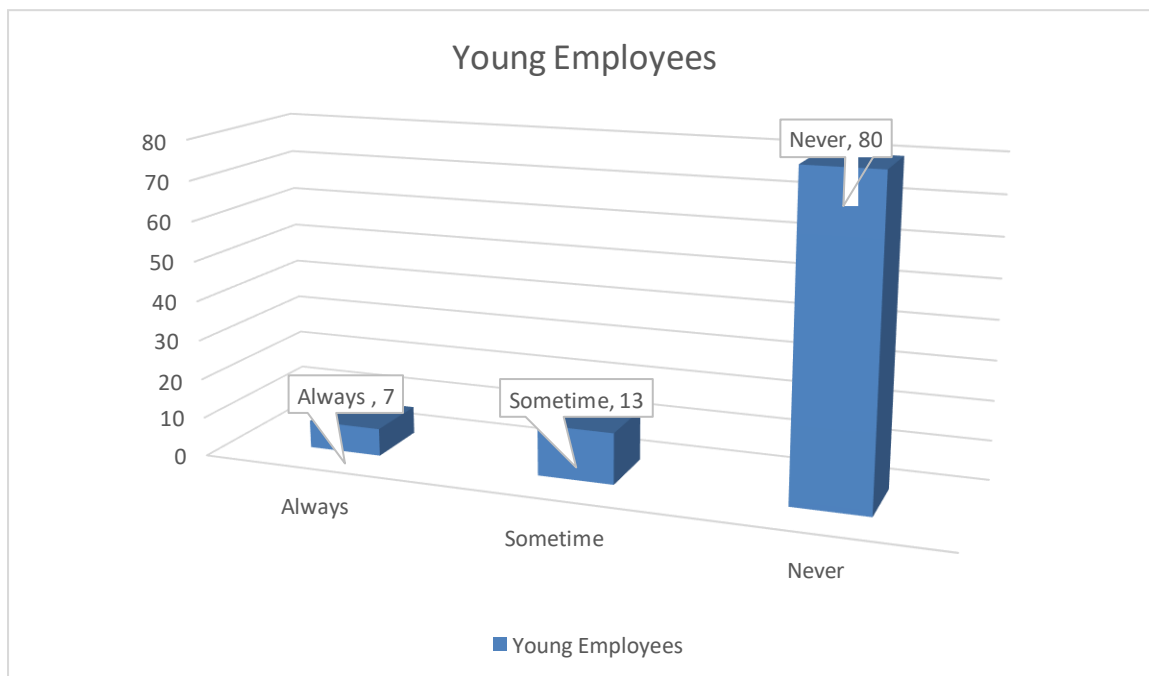


Safety Measures	Safety Goggles	Safety Shoes	Safety Induction	Fair Safety
No of respondent	89	86	11	14

Interpretation

Safety shoes and safety goggles are the most commonly given answer. Employees without safety shoes are not even allowed into the premises. They are given brief safety induction at the time of their joining.

Have you noticed any young employee working on dangerous machinery?

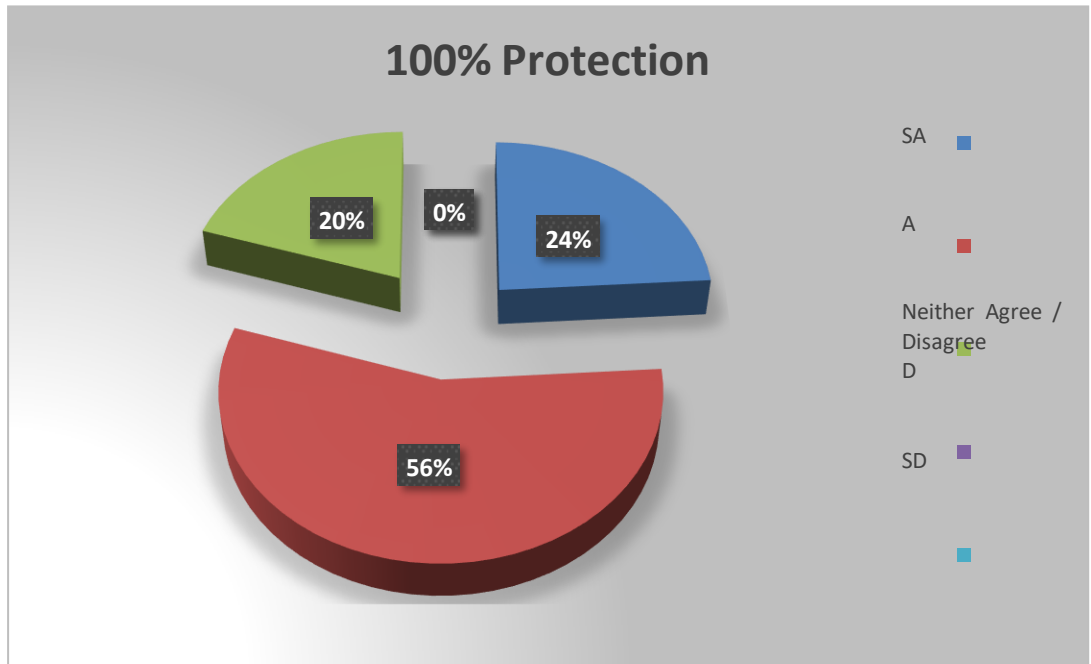


Young Employee	Always	Sometimes	Never
	7	13	80

Interpretation

Apprentices who are joined will be 1 year or 6 months less for 18 years.
 Other than this, no other employees are less than 18 years of age

3. Xpro aims at 100% Protection against Employee Health and Safety.

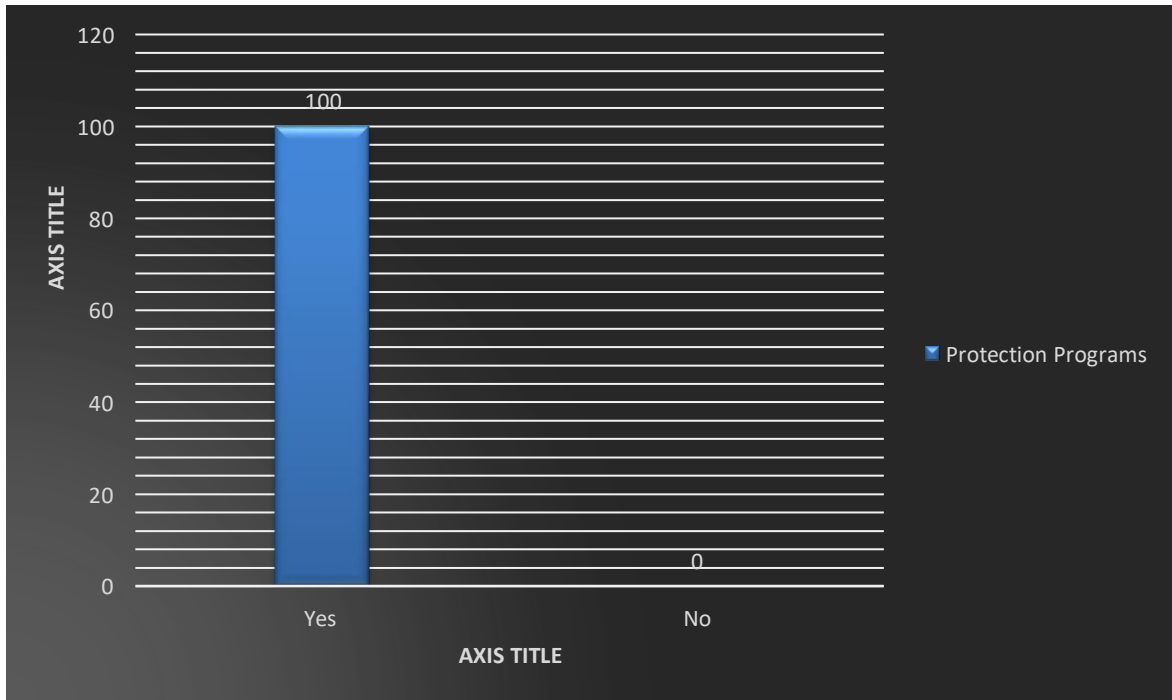


100% Protection	SA	A	Neither Agree/Disagree	D	SD
No of respondent	24%	56%	20%	0%	0%

Interpretation

It is very true that Xpro takes 100% protection against Employee Health and Safety. Xpro does not compromise with Health, Safety and Welfare of the Employees.

4. Does Xpro initiate program that promotes Safety of the Employees?



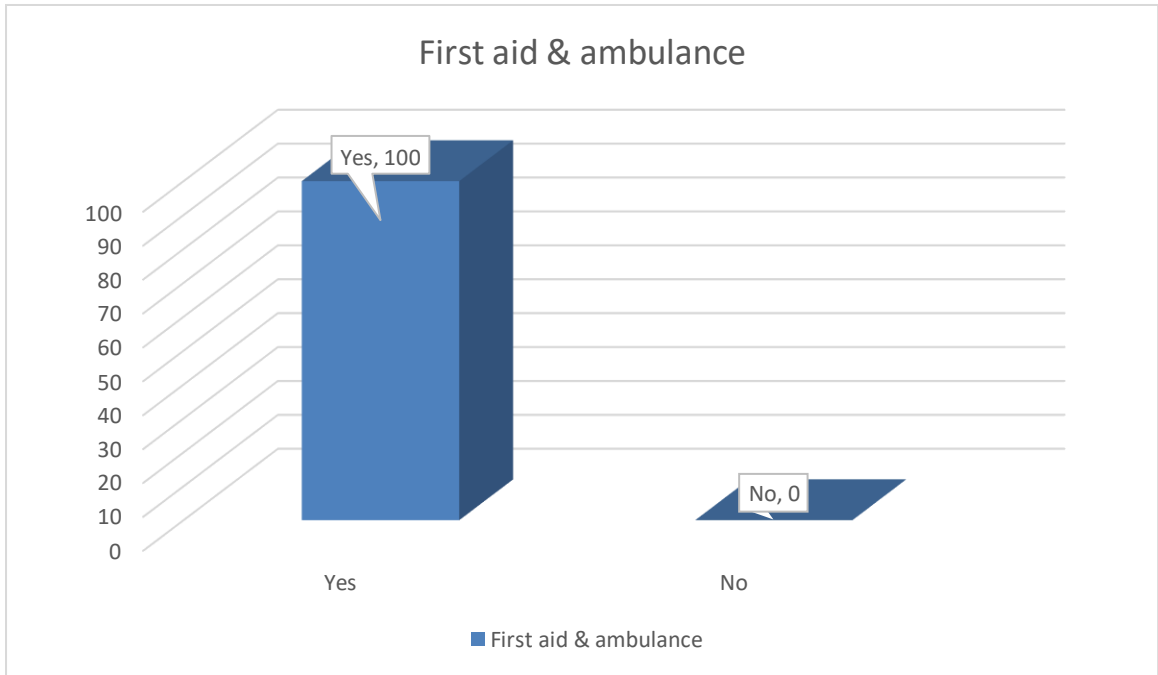
Protection Program	Yes	No
No of respondent	100	0

Interpretation

Xpro initiates protection programs to the employees like safety briefing at the time of their joining and many other programs. They do special programs for especially for women employees regarding their safety in the company premises.

WELFARE MEASURES

1. Does Xpro provide first-aid and ambulance facility?

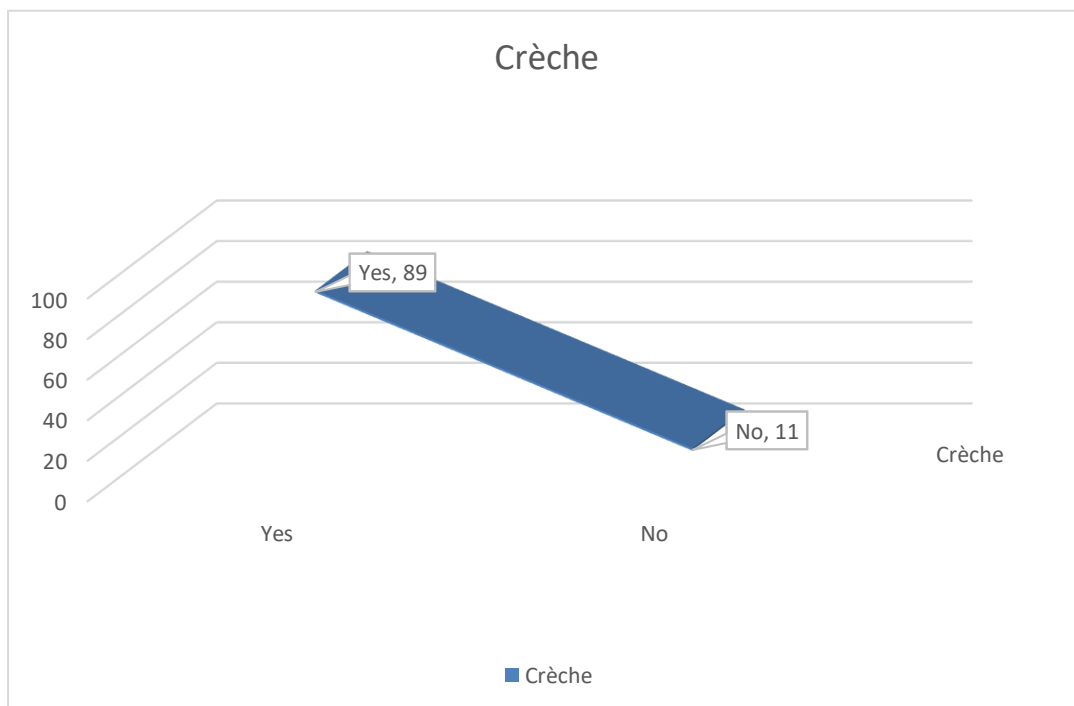


First aid & ambulance	Yes	No
No of respondent	100	0

Interpretation

Xpro makes sure that all employees' welfare is taken care off. As there are 1000 plus, employees in this particular plant first aid and ambulance must be mandatory and they have followed it as per Factories Act.

2. Are women employees provided with crèche facility?

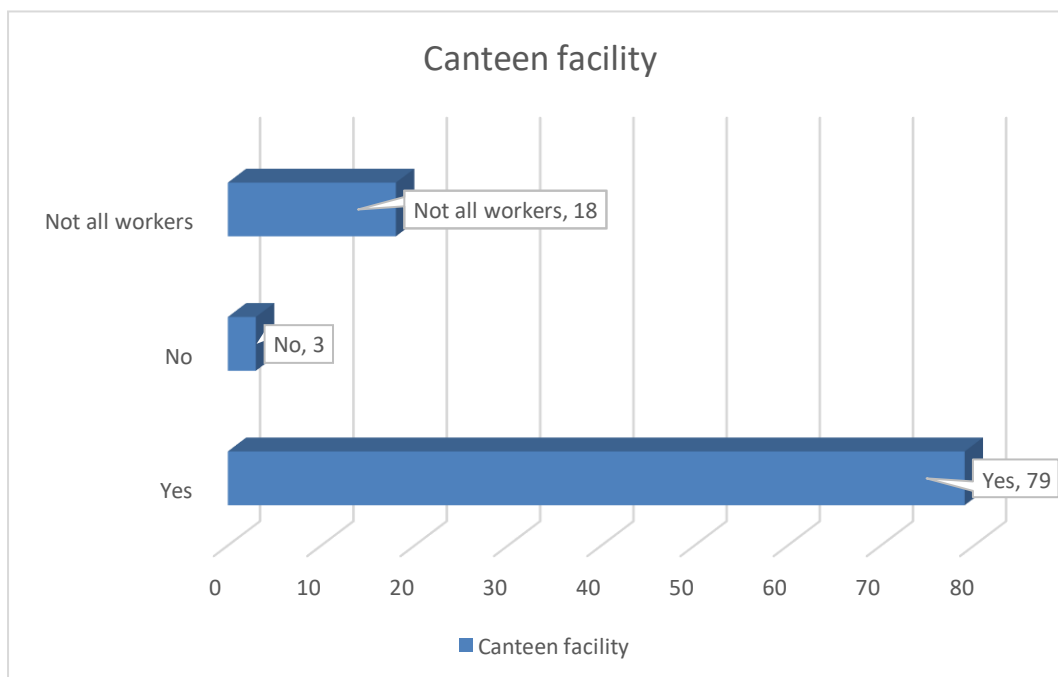


Crèche	Yes	No
No of respondent	89	11

Interpretation

Even though women employees are very less when compared to men employees Crèche facility is also provided by the company to women employees

3. Are all the workers eligible for free canteen facility?



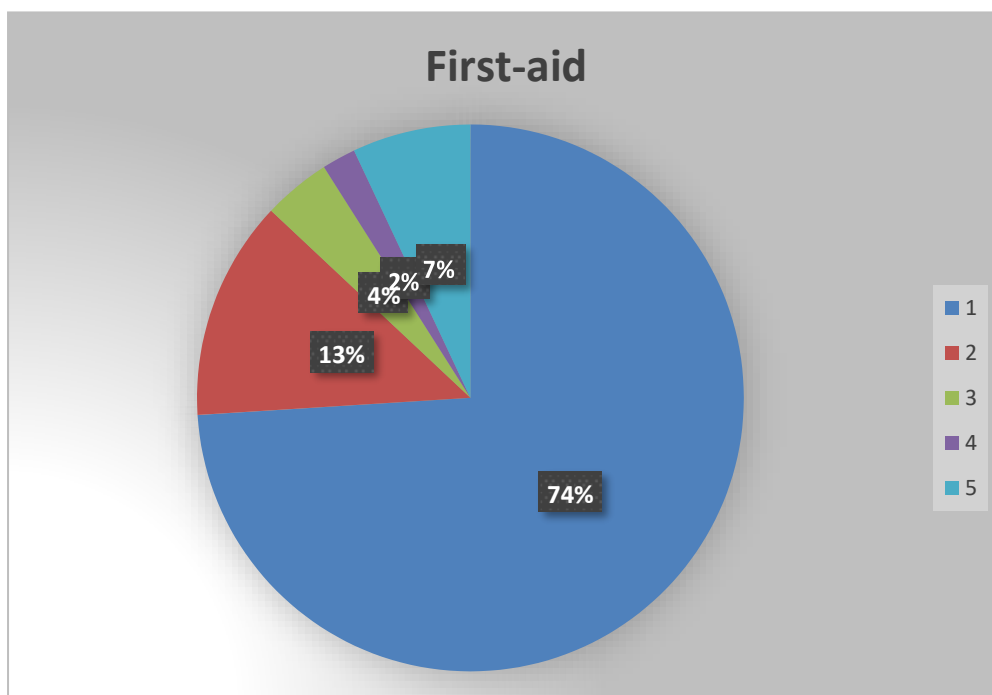
Canteen Facility	Yes	No	Not all Workers
No of respondent	79	3	18

Interpretation

Apprentices are not allowed in the main canteen; they have a different canteen below their department. This is the reason some of them have said not all workers are eligible

4. How do you rate the following welfare measures followed at XproIndia Limited? 1 being the best and 5 being the worst

a. First-aid

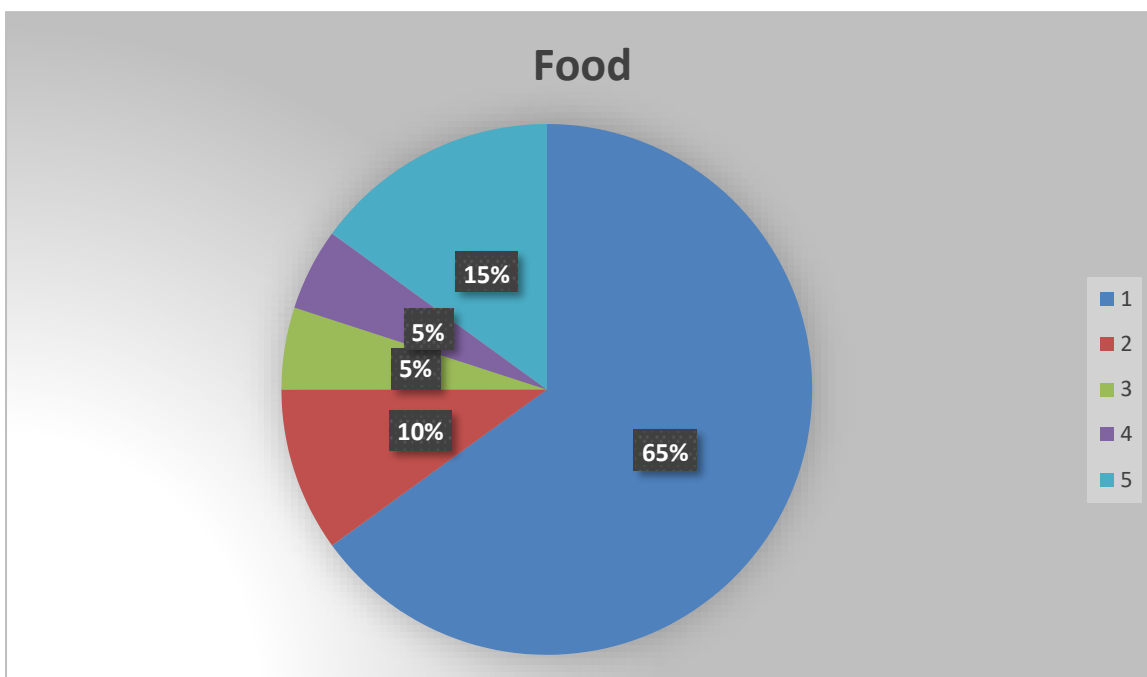


<u>First-aid</u>	1	2	3	4	5
	74	13	4	2	7

Interpretation

First-aid treatment is immediately provided to the injured. Doctor will be available 24*7. Ratings are based on effectiveness of treatment which dint seem to impress some employees

b. Food



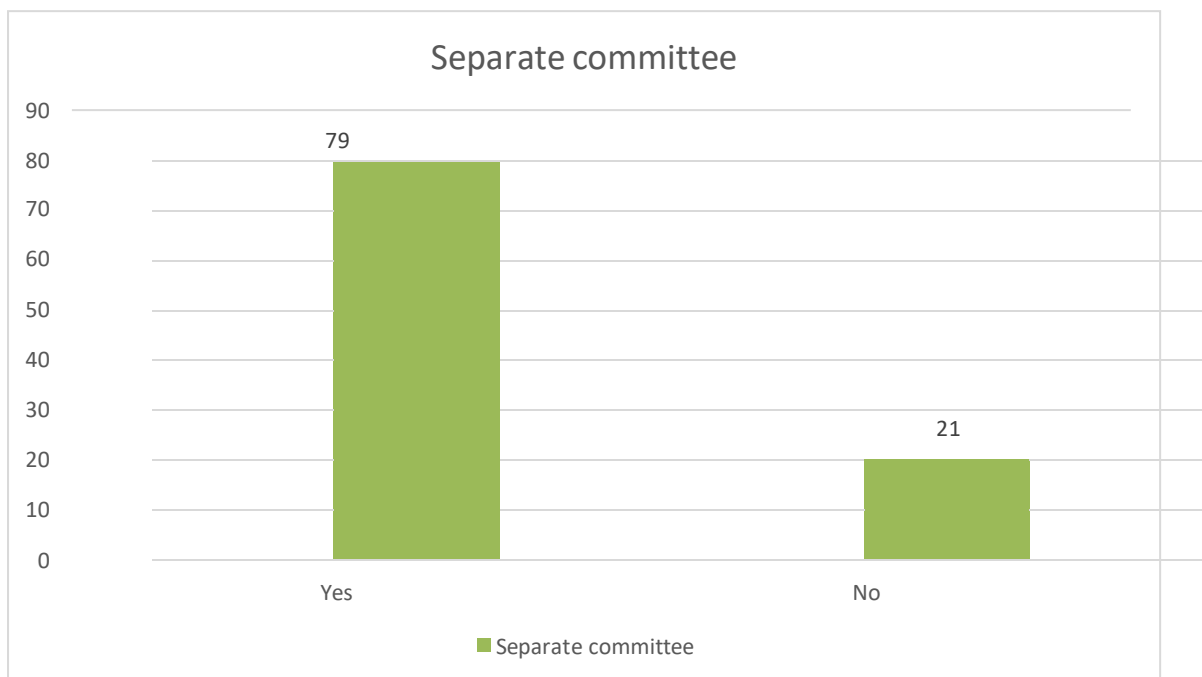
Food	1	2	3	4	5
	65	10	5	5	15

Interpretation

Food is provided twice a day. Breakfast and lunch/ dinner based on their shift timings.

Variety of food will be provided and are typical Maharashtrian style food, as some employees are from north India, they don't like this type of food style.

1. Does Xpro have a separate committee to monitor Employee’s Health, Safety and Welfare?



Separate committee	Yes	No
No of respondent	79	21

Interpretation

Xpro has a separate committee known as Employee Health and Safety- EHS

2. Are you satisfied with the work environment?

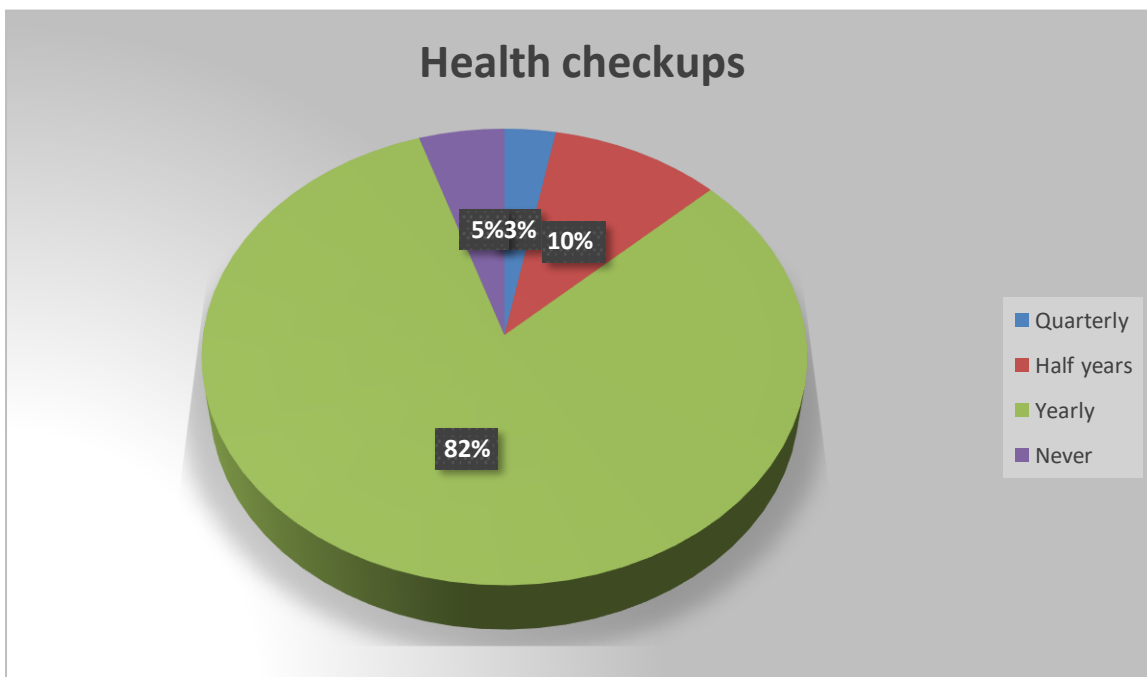


Satisfaction	Yes	No
No of respondent	91	9

Interpretation

3/4th of the sample size is happy with the work environment and rest is not that satisfied with the work environment

3. How often does your company offer health check-up's?

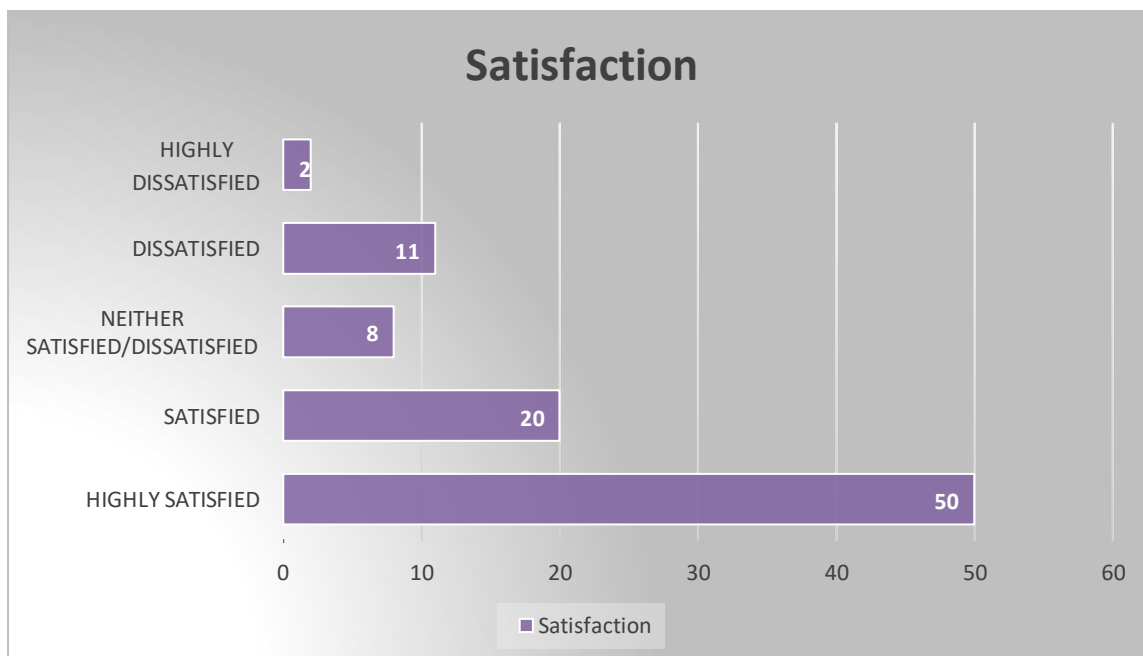


Health Check-up's	Quarterly	Half Years	Yearly	Never
No of respondent	3	10	82	5

Interpretation

Xpro offers health check-up yearly once and for contract employees or apprentice, health check-ups are conducted at the time of their joining

4. How satisfied are you with Health, Safety and Welfare measures followed at Xpro India Limited?

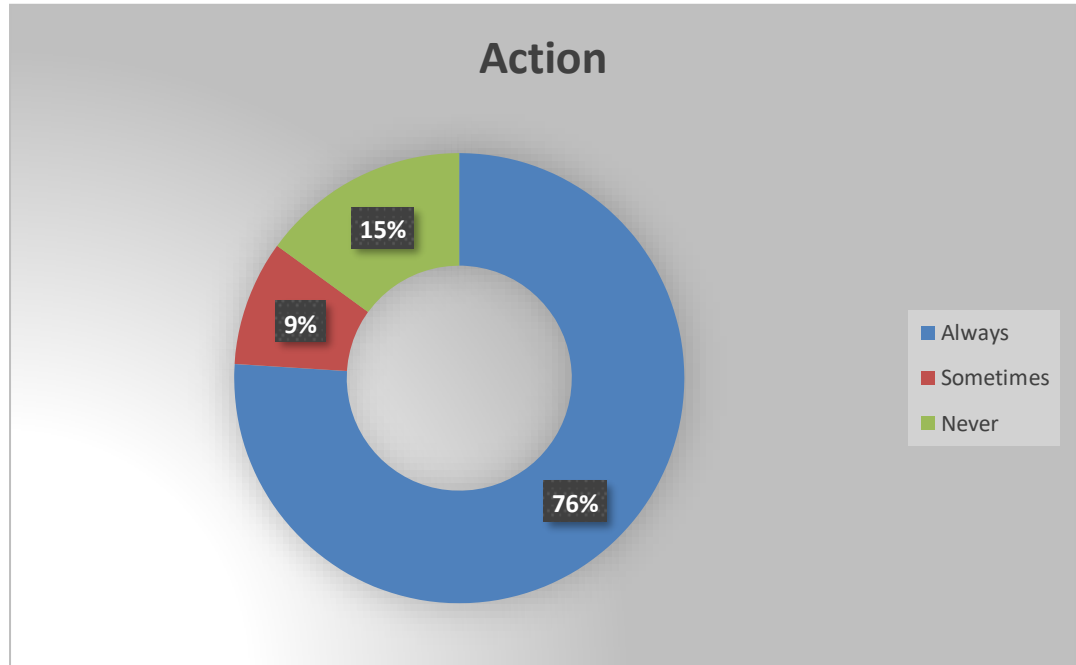


Satisfaction	Highly Satisfied	Satisfied	Neither Satisfied / Dissatisfied	Dissatisfied	Highly dissatisfied
No of respondent	50	20	8	11	2

Interpretation

Employees are mostly highly satisfied and satisfied. Some have mentioned that they are somewhat satisfied and very few have mentioned that they are dissatisfied.

5. Does your company take any actions on those who do not follow rules?

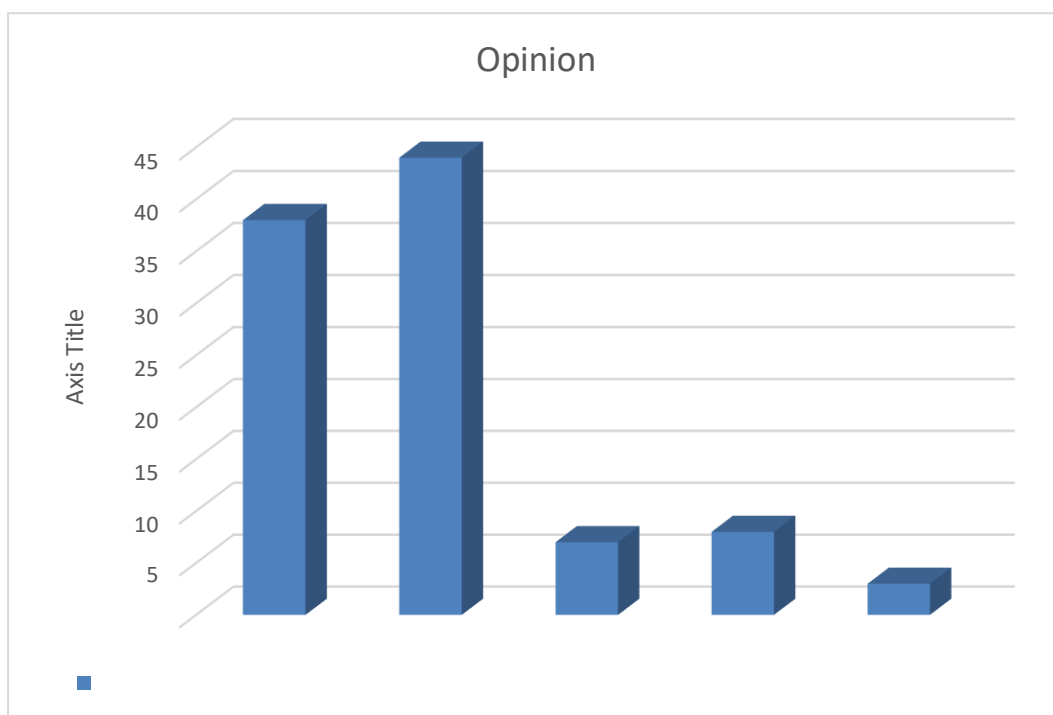


Action	Always	Sometimes	Never
No of respondent	76	9	15

Interpretation

Xpro policy is to warn at first for those who do not follow the rules and if it is repetitive then action will be taken against them

6. What is your overall image about HSW measures followed at Xpro India Limited?



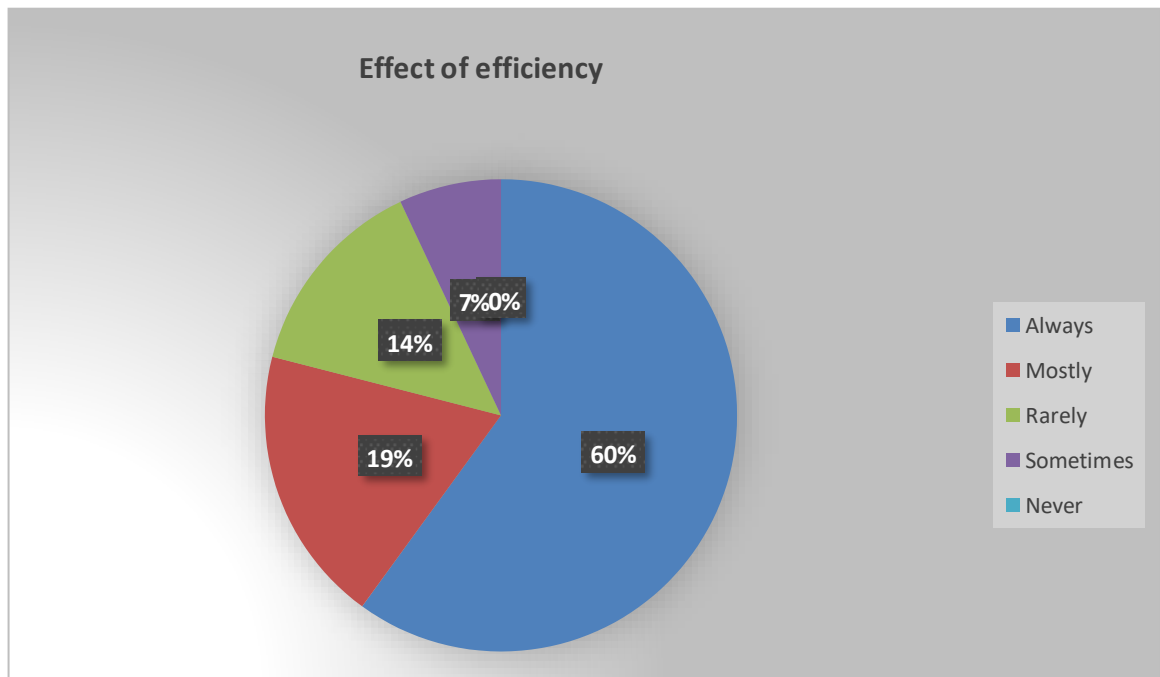
Opinion	a	b	c	d	e
No of respondent	38	44	7	8	3

Opinion	a	b	c	d	e
No of respondent	38	44	7	8	3

Interpretation

Overall opinion of some employees was that Xpro has excellent Employee health safety and welfare measures and high percentage of employees stated that it has good measures and others stated that it is average and poor

7. Does Efficiency of your work depend on the health, safety and welfare measures followed at Xpro?



Effect of efficiency	Always	Mostly	Rarely	Sometimes	Never
No of respondent	60	19	14	7	0

Interpretation : Most of the employees were of opinion that their efficiency is dependent on the health, safety and welfare measure.

Findings:

- From the data analysis it can be interpreted that 81% employees are male, and 19% employees are female.
- In this factor it can be concluded that training before handling difficult machine is highly satisfied factor among all and transport facility is highly dissatisfied factors.
- From the data collection and analysis, it can be concluded that organization is doing well for the employees and providing most of HSW related atmosphere for the employees which helps in the

betterment of themselves and also the organization.

- From the study it can be concluded that company is using factory act legislation and it also implement this same in organization. Most of the factors are provided by the company like safety and welfare policy, first aid treatment etc.
- From the study it concludes that training provided before handling difficult machine is more satisfied factors. And the transportation facility is dissatisfied factor for the employees. Company has to provide transport facility for the betterment of employees

Conclusion : According to Analysis (Correlation) between satisfaction of employees regarding Health, Safety and welfare measures followed at Xpro and the effectiveness of employees in their work shows a positive correlation of 0.97. This implies that according to respondents more the satisfaction with regards to measures followed at Xpro more the efficiency of employees towards the work

Suggestions

Some employees suggested the admin department to provide cab facility even for apprentice.

Suggestions about food quality were given that, that quality can be better.

Not all departments have Washroom facilities. Departments such as Stores, Purchases must be provided with the Washroom Facility.

There are many women employees. But when compared to male employees, female employees are very less. To create a comfortable working environment, a greater number of women employees must be hired.

As per Apprentice, especially ITI Apprentice. Accommodation and transportation facility should be provided by the company .

Call for Papers

National Journal of Research in Marketing, Finance & HRM is a national, open-access journal. The journal is published in only print version.

All papers related to the following topics are preferred: 🌈

Marketing

Marketing research & strategy, Branding & consumer behavior studies, E- marketing, Personal selling & sales management, CRM, Retail/service marketing and other topics related & relevant to Marketing Management.

🌈 Financial Management

Banking & finance, Capital market research, Financial inclusion, Corporate governance, Micro finance systems, Financial and cost accounting, Tax reforms and other topics related & relevant to financial management

🌈 Human Resource Management

Performance appraisal systems, Work-life balance, Green HRM, Training & development, Change management, HR audit and other topics related & relevant to HRM

If you have any appropriate papers, please submit it njr.editor@gmail.com or send on the postal address. If you have problems in your submission, please submit it to njr.editor@gmail.com for help.

It is also appreciated for you to share this information with your fellows and colleagues.

Author Guidelines

Submission of an article implies that the work described has not been published previously, that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, will not be published elsewhere in the same form, in English or in any other language, without the written consent of the Publisher. The Editors reserve the right to edit or otherwise alter all contributions, but authors will receive proofs for approval before publication.

Copyrights for articles are retained by the authors, with first publication rights granted to the journal. The journal/publisher is not responsible for subsequent uses of the work. It is the author's responsibility to bring an infringement action if so desired by the author.

The publisher and journals have a policy of “**Zero Tolerance on the Plagiarism**”.

The authors authorize the publisher to archive the article into databases and indexes (such as EBSCO, DOAJ, ProQuest, etc.), and permit the publisher to apply DOI to the article.

All manuscripts should be prepared in MS-Word format, and submitted online. If you have any questions, please contact with us at: njr.editor@gmail.com

The research journal 'National Journal of Research in Marketing, Finance & HRM' title verified by Registrar of Newspapers for India (RNI), New Delhi.

Printed and published by Dr. Kishor N. Jagtap (Chief Editor) on behalf of SNG Institute of Management & Research, Pune – 410505 and printed at Shivshambho Printers, Rajgurunagar.