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"A STUDY ON HIGH INVOLVEMENT WORK SYSTEMS AND THEIR EFFECT ON EMPLOYEE PERFORMANCE USING ANALYTICS: An ANALYSIS OF MILK INDUSTRY"

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ABSTRACT:

This study examines the role of High Involvement Work Systems (HIWS) in enhancing employee performance and fostering a productive workplace environment. HIWS, characterized by practices such as participative decision-making, performance feedback, and coaching, are increasingly recognized as critical tools for driving employee engagement and organizational success. By focusing on core areas such as employee motivation, job satisfaction, organizational commitment, and work-life balance, this research highlights the transformative potential of HIWS in optimizing workforce dynamics.

The study explores how performance feedback and coaching, as integral components of HIWS, influence employee motivation. Constructive feedback and personalized coaching are shown to empower employees, align their efforts with organizational goals, and cultivate a sense of ownership in their roles. Additionally, the research delves into the impact of HIWS on job satisfaction and organizational commitment, emphasizing how practices that prioritize employee participation and recognition foster loyalty and a positive organizational culture.

Furthermore, the study investigates the relationship between HIWS and employee well-being, particularly their role in achieving work-life balance. By offering flexible work arrangements and supportive management, HIWS contribute to a healthier work environment and reduce stress. This, in turn, enhances employees' overall satisfaction and productivity. The research also examines the ability of HIWS to reduce absenteeism and tardiness rates by creating an engaging and inclusive workplace that motivates employees to remain present and punctual.

In summary, this study underscores the effectiveness of HIWS in driving employee performance through motivation, satisfaction, and well-being. By fostering a culture of involvement and engagement, organizations can address critical workforce challenges and enhance overall productivity. The findings provide actionable insights for organizations aiming to implement HIWS as a strategic approach to workforce management.

MILK INDUSTRY - COMPETITIVE ANALYSIS

The milk industry is highly competitive and dynamic, shaped by various factors such as consumer demand, regulatory standards, technological advancements, and supply chain

management. In the context of applying High Involvement Work Systems (HIWS) and analytics to assess their effects on organizational performance, a competitive analysis examines key players, market trends, and the industry landscape. Below is a competitive analysis of the milk industry, with a focus on how HIWS and analytics can be used to gain a competitive edge.

Major Competitors

Global Dairy Giants: Companies like Nestlé, Danone, and Lactalis dominate the international market with strong brand recognition and diversified dairy portfolios. These companies focus on large-scale production and supply chain efficiency.

Regional Leaders: Local market players like Amul (India), Fonterra (New Zealand), and Parmalat (Italy) are highly competitive within their respective regions. They often emphasize localized sourcing and consumer preferences.

Small-Scale and Niche Producers: Small and medium-sized enterprises (SMEs) that focus on organic, grass-fed, or specialty dairy products are gaining market share by catering to niche markets and health-conscious consumers.

Market Trends

Shift Toward Health-Conscious Products: Consumers are increasingly demanding organic, lactose-free, and plant-based milk alternatives. Companies that offer such products, including almond milk and soy milk, are experiencing rapid growth.

Sustainability and Ethical Sourcing: Environmental concerns and animal welfare are influencing consumer choices. Firms that invest in sustainable practices, such as reducing carbon footprints and ensuring humane animal treatment, are gaining competitive advantages.

Digital Transformation: The adoption of data analytics, automation, and smart technologies is becoming a key differentiator in managing the milk supply chain, improving efficiency, and reducing costs.

Application of HIWS in the Milk Industry

Employee Empowerment and Innovation: Leading firms are increasingly implementing HIWS by involving employees in decision-making, innovation, and process improvement. Companies that empower their workforce are better able to innovate, streamline operations, and respond to market demands faster.

Cross-Functional Collaboration: Encouraging collaboration between various teams such as procurement, logistics, and marketing ensures that the entire supply chain is managed effectively, reducing bottlenecks and improving overall operational performance.

Analytics in the Milk Industry

Supply Chain Optimization: Companies using advanced analytics tools can predict demand patterns, optimize routes for milk collection, and improve cold chain management to ensure freshness. This is critical for maintaining a competitive advantage in a perishable goods industry.

Quality Control and Waste Reduction: Analytics can be used to monitor and improve quality control throughout the production process. Early detection of spoilage risks, contamination, or inefficiencies in production can help reduce waste and improve profitability.

Customer Insights and Personalization: Through data analytics, companies can gain valuable insights into consumer behavior, enabling them to tailor products and marketing strategies. This is particularly important for niche and premium product lines like organic and lactose-free milk.

Key Competitive Advantages

Technological Leadership: Companies investing in automation and analytics are seeing reduced operational costs and increased efficiency, providing them with a competitive edge over traditional dairy producers.

Product Differentiation: Firms that offer innovative products such as functional milk (e.g., fortified with vitamins or probiotics), plant-based alternatives, or organic milk can capture specific consumer segments and gain market share.

Sustainability Practices: As consumer demand for eco-friendly products rises, companies with strong sustainability initiatives, such as reducing emissions, water usage, and packaging waste, are positioned to outperform competitors.

Challenges and Competitive Threats

Price Sensitivity: Milk is a commodity, and price fluctuations can significantly impact profitability. Producers who fail to control costs or optimize their supply chains may struggle to compete.

Regulatory Pressures: Dairy producers must navigate complex regulatory frameworks related to food safety, environmental standards, and animal welfare. Those unable to comply efficiently may face higher operational costs or legal risks.

Emerging Alternatives: The rise of plant-based milk alternatives poses a growing competitive threat to traditional dairy products, especially in health-conscious and vegan markets.

How HIWS and Analytics Provide Competitive Advantage

Enhanced Organizational Performance: By integrating HIWS, companies can foster a more motivated and innovative workforce, leading to operational improvements. Employees involved in decision-making can offer valuable insights into process enhancements, quality improvements, and cost reductions.

Data-Driven Decision Making: Analytics allows companies to make informed, data-driven decisions. Firms using predictive analytics to forecast demand, manage inventory, and optimize distribution are more likely to outperform competitors reliant on traditional, less agile methods.

Operational Efficiency: HIWS can enhance employee productivity, while analytics helps fine-tune operational efficiency by identifying areas for process improvement. Together, these approaches can significantly reduce operational costs while maintaining high product quality.

HIGH INVOLVEMENT WORK SYSTEM

High Involvement Work Systems (HIWS) are a strategic approach to human resource management that emphasizes employee engagement, empowerment, and active participation

in organizational processes. These systems integrate practices such as performance feedback, coaching, participative decision-making, and skill development to create a work environment that fosters motivation and commitment. By involving employees in key decision-making processes and providing continuous support through feedback and coaching, HIWS help align individual goals with organizational objectives, enhancing both job satisfaction and productivity.

The implementation of HIWS has a significant impact on employee performance by addressing factors such as well-being and work-life balance. Practices like flexible work arrangements and supportive management foster a sense of autonomy and reduce workplace stress, enabling employees to perform at their best. Moreover, HIWS contribute to reducing absenteeism and tardiness by creating a culture of accountability and engagement. Employees feel valued and recognized, which enhances their intrinsic motivation and dedication to the
Overall, HIWS represent a powerful framework for improving employee performance by building a collaborative and inclusive workplace culture. Organizations that adopt HIWS are better positioned to enhance employee morale, commitment, and productivity, ultimately driving sustainable success.

FACTORS INVOLVING HIGH INVOVLEMENT WORK SYSTEM

Performance Feedback: Regular and constructive feedback helps employees understand their strengths and areas for improvement. It aligns their efforts with organizational goals, boosts confidence, and fosters a growth-oriented mindset, leading to enhanced productivity.

Coaching and Training: Continuous learning opportunities and coaching sessions enhance employee skills and competencies. When employees feel supported in their professional development, they perform better and are more committed to organizational success.

Participation in Decision-Making: Involving employees in organizational decision-making creates a sense of inclusion and value. This engagement leads to higher job satisfaction, loyalty, and a proactive approach to achieving business goals.

Recognition and Rewards: Acknowledging employee contributions through rewards and recognition programs enhances morale and motivates employees to maintain high performance levels.

Trust and Transparency: Fostering a culture of trust through open communication and transparency builds a positive workplace environment. Employees in such settings are more engaged and aligned with organizational goals.

KEY TRENDS IN MILK INDUSTRY

The milk industry is experiencing significant changes due to evolving consumer preferences, technological advancements, and environmental concerns. Here are some key trends shaping the industry:

Rising Demand for Plant-Based Alternatives

There is increasing consumer demand for plant-based milk alternatives like almond, oat, soy, and coconut milk due to dietary preferences, lactose intolerance, and ethical concerns around

animal welfare. This trend is driven by health-conscious and vegan consumers, pushing traditional dairy brands to diversify their offerings.

Focus on Health and Nutrition

Consumers are increasingly looking for dairy products that offer added health benefits. This includes products like fortified milk with added vitamins and minerals, probiotic- rich dairy (e.g., yogurt), and low-fat or lactose-free options. Functional dairy products that promote gut health, immunity, and overall wellness are gaining popularity.

Sustainability and Environmental Impact

The dairy industry is under pressure to reduce its environmental footprint. Many companies are investing in sustainable farming practices, reducing greenhouse gas emissions, and adopting water and energy-efficient technologies. Sustainable packaging and waste management are also key focuses, with a shift toward biodegradable or recyclable packaging materials.

Technological Advancements

Technology is transforming dairy farming and production. Automation in milking processes, AI-driven animal health monitoring, and blockchain for supply chain transparency are some innovations that improve efficiency and traceability. Additionally, advancements in food processing technologies are helping produce high-quality dairy products with longer shelf life.

Premium and Organic Dairy Products

There's a growing market for premium, organic, and "clean label" dairy products. Consumers are willing to pay more for products that are perceived as healthier, free from artificial additives, and produced in ethical and sustainable ways. Organic milk, which is free from synthetic pesticides and hormones, is particularly in demand.

Shift Toward Value-Added Dairy Products

The industry is seeing increased demand for value-added dairy products such as cheese, butter, flavored milk, and yogurt. As urbanization rises and lifestyles change, ready-to-consume dairy products are becoming more popular, particularly in urban markets.

Consumer Preference for Local and Authentic Products

Consumers are increasingly seeking locally sourced and regionally authentic dairy products. The trend of supporting local farmers and consuming fresh, minimally processed milk has gained traction, especially in markets where consumers are more focused on sustainability and transparency in food sourcing

ECONOMIC IMPACT OF MILK INDUSTRY

The milk industry has a profound economic impact at both global and national levels, contributing significantly to livelihoods, food security, and economic growth. Below are key areas where the milk industry affects the economy:

Contribution to Agriculture and Rural Economies

The dairy sector plays a crucial role in rural economies, especially in developing countries like India, where the majority of milk production comes from small- scale farmers. In India alone, the dairy industry accounts for more than 4% of the GDP and provides direct employment to around 70 million rural households. Dairy farming serves as a primary or supplementary source of income for millions, helping reduce poverty and boost rural livelihoods.

Milk production diversifies farm income and reduces risk by providing a stable income source, even in adverse agricultural conditions.

Employment Generation

The milk industry is labor-intensive, providing jobs across various segments, including dairy farming, milk processing, packaging, and distribution. In countries like the United States and Europe, the industry supports thousands of jobs, from farm laborers to professionals in food technology, logistics, and marketing.

In addition to direct employment, the industry stimulates job creation in allied sectors like animal feed production, veterinary services, equipment manufacturing, and transport.

Support to Allied Industries

The dairy industry supports a range of allied industries, including animal husbandry, veterinary services, feed production, machinery, refrigeration, and cold storage. This interconnectedness boosts industrial growth and innovation in agriculture-related technologies.

The sector also stimulates the demand for packaging materials, which in turn drives the packaging industry and supply chain logistics, making the dairy value chain a significant part of the overall economy.

Value Addition and Export Revenue

The milk industry contributes to the economy by processing raw milk into various value-added products like cheese, butter, yogurt, and ice cream. This value addition not only increases revenue but also generates more jobs in processing and marketing.

Dairy exports, especially of value-added products, contribute to foreign exchange earnings. Countries like New Zealand, the United States, and the Netherlands are major exporters of dairy products, and exports significantly bolster their national economies. India, while mainly a domestic consumer of its dairy output, is also emerging as a key exporter of milk powders and ghee.

Impact on Inflation and Food Prices

Milk is a staple food item in many countries, and fluctuations in milk prices can impact overall inflation. In many developing nations, dairy products form a large part of the household food basket, meaning price changes affect consumer spending power.

When dairy production costs rise due to factors like feed price inflation, poor weather, or disease outbreaks, the cost of milk increases, which in turn impacts food inflation, especially in regions heavily dependent on dairy.

Technological Innovation and Modernization

The demand for increased productivity and sustainability in the milk industry has led to technological innovations in areas like automated milking systems, genetic improvements, feed optimization, and environmental management. These innovations spur economic growth by improving efficiency and productivity

DATA ANALYTICS

Data analytics is a transformative field that examines and interprets vast amounts of data to extract meaningful insights and support decision-making. By leveraging statistical methods, algorithms, and advanced software tools, data analytics turns raw data into actionable information, identifying patterns and trends that help organizations make informed choices. Businesses use data analytics to understand

customer behavior, optimize operations, and develop strategies based on historical data.

The evolution of technology has greatly enhanced data analytics capabilities. Modern tools enable real-time data processing and complex analyses, including predictive and prescriptive analytics. Techniques such as machine learning and artificial intelligence further improve accuracy and automate insights. As data volumes and complexity continue to grow, the ability to analyze and interpret this information becomes crucial for driving innovation and maintaining a competitive edge across sectors. In industries like finance, healthcare, and retail, data analytics is vital for shaping strategic decisions and fostering growth.

LITERATURE REVIEW:

It explores the impact of High Involvement Work Systems (HIWS) on financial performance within the tech industry, a sector where financial results are critical. Their review, which covers studies from 2022 to 2024, aims to determine how HIWS practices such as increased employee involvement and empowerment affect financial outcomes like productivity and profitability. The review finds a generally positive correlation between HIWS and financial performance, suggesting that these systems enhance organizational efficiency and innovation, leading to better financial results. However, Freeman and Wong critique the predominant reliance on financial metrics, arguing that it overlooks the broader effects of HIWS on organizational culture and employee attitudes. They highlight a gap in the literature, noting the need for research that includes both financial and non-financial performance indicators. Additionally, they call for studies across diverse industries to provide a more comprehensive understanding of HIWS effectiveness. Freeman, J., & Wong, M. (2023)

It examines the impact of high participation work systems (HIWS) on employee motivation in different sectors. This study is necessary to understand how HIWS can increase employee motivation and overall organizational performance. The purpose of this review is to assess how various aspects of HIWS - such as extensive training, employee participation in decision-making and empowerment

- affect employee motivation. The scope of the review includes studies from 2022 to 2024, focusing on different sectors and geographies. The literature shows a positive relationship between HIWS and employee motivation, and that HIWS activities increase job satisfaction,

engagement and loyalty. However, Huang and Lim critically analyze the methodology of the studies reviewed, highlighting the importance of cross-sectional designs and surveys, which may limit the ability to determine causality. They argue for more longitudinal studies with participatory approaches to gain a deeper understanding of the impact of HIWS on motivation over time. The review concluded that while HIWS has a positive effect on increasing employee motivation, there are significant gaps in the literature. Future research should address these areas by examining the effects of HIWS in cultural and regional contexts, using diverse and robust approaches. Hwang, S., & Lim,
J. (2023)

This study examines the effects of High Involvement Work Systems (HIWS) on employee engagement within the Indian IT sector, providing insights into how these practices can enhance engagement in a fast-paced and dynamic industry. The literature review spans research from recent years, focusing on studies conducted between 2022 and 2024. The primary objective is to understand how HIWS components, such as participative decision-making, extensive training, and employee empowerment, influence employee engagement levels. The review identifies a positive correlation between HIWS and increased employee engagement, highlighting that such practices foster a sense of ownership and motivation among employees. Garg and Bhatnagar critically analyze the methodologies used in the reviewed studies, noting a predominance of quantitative approaches, such as surveys and statistical analysis. While these methods provide valuable data, they suggest that a lack of qualitative research limits the understanding of the deeper, more subjective aspects of employee engagement. The review concludes that although HIWS significantly enhance employee engagement in the Indian IT sector, future research should incorporate more diverse methodological approaches, including qualitative studies and longitudinal research, to fully capture the long-term and nuanced impacts of HIWS on employee engagement. Garg, P., & Bhatnagar, J. (2022)

STATEMENT OF THE PROBLEM:

The introduction of High Involvement Work Systems (HIWS) offers a potential solution to improve these outcomes by fostering a more participative and empowered workforce. However, Milk industry has yet to fully implement HIWS consistently across its operations, and there is little empirical evidence on how these systems influence performance metrics such as efficiency, employee retention, customer satisfaction, and profitability. Furthermore, Milk industry struggles with leveraging advanced analytics to measure and evaluate the impact of HIWS, limiting its ability to make data-driven decisions for organizational improvement. The problem lies in Milk industry 's need to enhance employee involvement through HIWS, supported by analytics, to drive sustainable performance improvements, while overcoming cultural, structural, and technological barriers to implementation. This study seeks to address this gap by assessing the effect of HIWS on Milk industry organizational performance through an analytical approach.

NEED OF THE STUDY

Milk industry needs to adopt and evaluate High Involvement Work Systems (HIWS) to address challenges in operational efficiency, employee engagement, and competitiveness as it expands in the dairy industry. Traditional management structures and limited employee participation

have hindered the organization from fully leveraging its workforce's potential, affecting motivation, productivity, and innovation. Implementing HIWS would foster a more collaborative environment where employees contribute to decision-making, problem-solving, and continuous improvement. Furthermore, Milk industry requires advanced analytics to assess the impact of HIWS on key performance metrics such as productivity, product quality, customer satisfaction, and profitability. By bridging the gap between human resource practices and data-driven decision-making, Milk industry can optimize operations, improve employee satisfaction, and ensure its long-term competitiveness and market leadership, all while empowering its workforce.

OBJECTIVES:

Assess the influence of performance feedback and coaching on employee motivation.

To analyze how HIWS affect employee job satisfaction and organizational commitment.

To analyze how HIWS impact employee well-being and work-life balance.

Assess the effect of HIWS on reducing employee absenteeism and tardiness rates.

SCOPE OF STUDY

The scope of this study encompasses a comprehensive analysis of High Involvement Work Systems (HIWS) and their impact on organizational performance through the application of advanced analytics. This research will focus on evaluating how different components of HIWS such as employee participation, skill development, autonomy, and performance-based rewards affect various performance metrics, including productivity, financial outcomes, employee engagement, and innovation. The study will utilize a range of analytical techniques, including regression analysis, predictive modeling, and cluster analysis, to assess the effectiveness of HIWS practices. It will also examine how HIWS practices are implemented across different organizational contexts and industries to identify best practices and potential areas for optimization. The research aims to provide actionable insights and data-driven recommendations for organizations seeking to enhance their HIWS strategies and improve overall performance. By focusing on the relationship between HIWS and key performance indicators, the study will contribute to a deeper understanding of how employee involvement systems can be leveraged to achieve organizational success and competitive advantage.

DATA COLLECTION

Primary data:

Primary data will be collected through questionnaires.

Secondary data:

Secondary data will be collected through books, websites, journals, and articles.

SAMPLING DESIGN

Data will be collected with the help of a questionnaire.

SAMPLING TECHNIQUES:

Convenience sampling will be adopted for the study.

SAMPLE SIZE:
53 respondents will be chosen for the study.

SAMPLING METHOD:
Non-Probability will be adopted for the study.

SAMPLING AREA:
Nandini Mega Hi-Tech powder plant (A Unit of KMF) Raman agar, MANMUL, Mandya, MYMUL, Mysore.

PLAN OF ANALYSIS
Data will be analyzing through the different statistical tools & techniques

LIMITATIONS

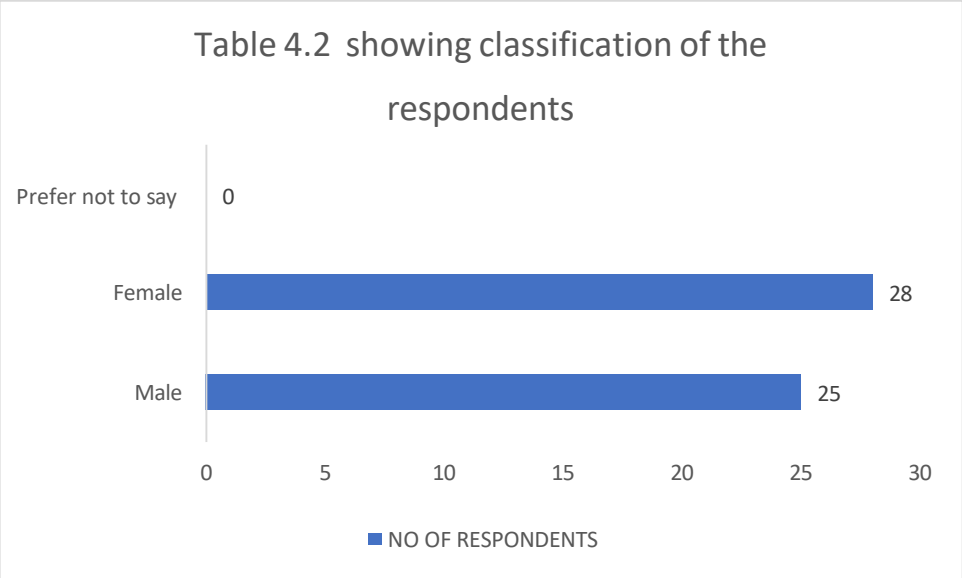
Limited access to comprehensive and current employee data.
Incomplete data might overlook crucial engagement aspects.
Resource constraints may limit the extent of analytics use.

DATA ANALYSIS:
The table shows classification of the Respondents

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Male	25	47.5%
Female	28	52,8%
Prefer not to say	0	0%
Total	**53**	**100%**

Source: Primary data

Analysis: The gender distribution shows a near-equal split, with slightly more female respondents (52.8%) than male (47.5%), while no respondents selected Prefer not to say. This balanced participation ensures diverse perspectives in the survey results.



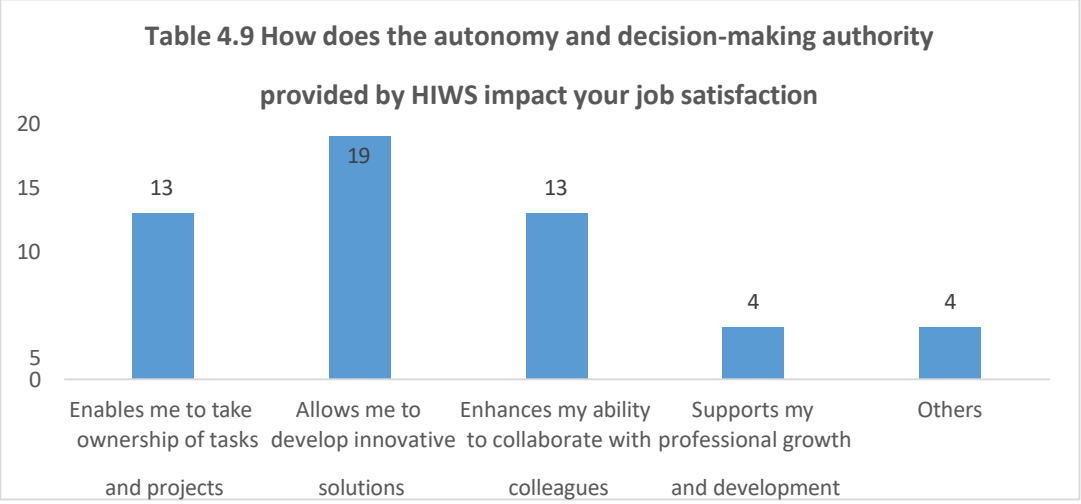
Interpretation: The survey responses indicate a nearly balanced gender distribution, with 52.8% identifying as female and 47.5% as male. No respondents selected "Prefer not to say," suggesting all participants disclosed their gender identity.

The table shows autonomy and decision-making authority provided by HIWS impact your job satisfaction

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Enables me to take ownership of tasks and projects	13	27%
Allows me to develop innovative solutions	19	34%
Enhances my ability to collaborate with colleagues	13	25%
Supports my professional growth and development	4	7%
Others	4	7%
Total	**53**	**100%**

Source: Primary Data

Analysis: The most significant benefit reported by respondents (34%) is the ability to develop innovative solutions, followed by task ownership and collaboration (27% and 25%, respectively). This indicates that employees highly value autonomy and creative problem-solving in their roles.



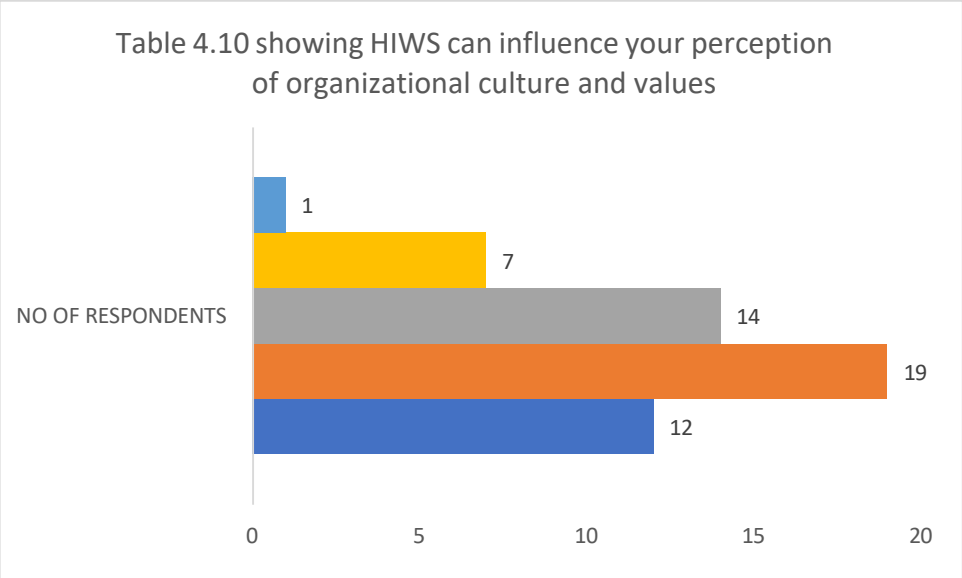
Interpretation: The majority of respondents (34%) feel that the initiative allows them to develop innovative solutions, followed by those who value taking ownership of tasks and enhancing collaboration (27% and 25%, respectively). Professional growth and development were less emphasized, with only 7% highlighting its importance.

The table shows HIWS influence your perception of organizational culture and values

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Aligns with my personal values and beliefs	12	22%
Fosters a collaborative and supportive work environment	19	36%
Encourages open communication and feedback	14	26%
Supports diversity and inclusion initiatives	7	14%
Enhances organizational reputation and credibility	1	2%
Total	**53**	**100%**

Source: Primary Data

Analysis: The majority of respondents (36%) appreciate a collaborative and supportive work environment, followed by open communication and alignment with personal values (26% and 22%, respectively). These results highlight the importance of teamwork, transparency, and shared values in fostering a positive workplace culture.



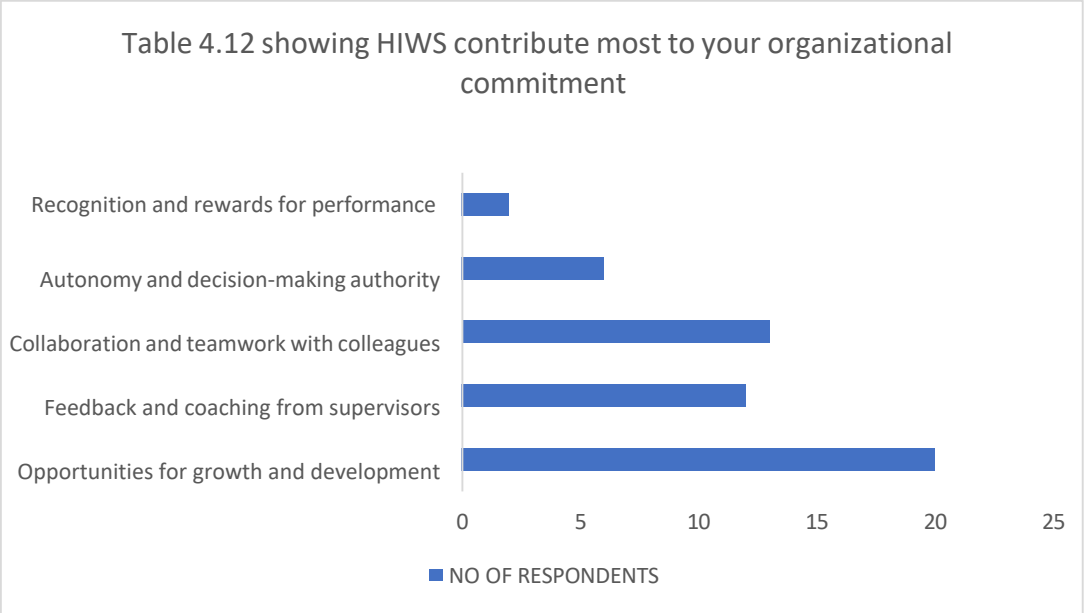
Interpretation: The majority of respondents (34%) feel that the initiative allows them to develop innovative solutions, followed by those who value taking ownership of task and enhancing collaboration (27% and 25%, respectively). Professional growth and development were less emphasized, with only 7% highlighting its importance.

The table shows of HIWS contribute most to your organizational commitment

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Opportunities for growth and development	20	38%
Feedback and coaching from supervisors	12	23%
Collaboration and teamwork with colleagues	13	24%
Autonomy and decision-making authority	6	12%
Recognition and rewards for performance	2	3%
Total	**53**	**100%**

Source: Primary Data

Analysis: The majority of respondents (38%) prioritize opportunities for growth and development, indicating its critical role in workplace satisfaction. Feedback, teamwork, and autonomy are moderately valued, while recognition holds minimal importance at just 3%.



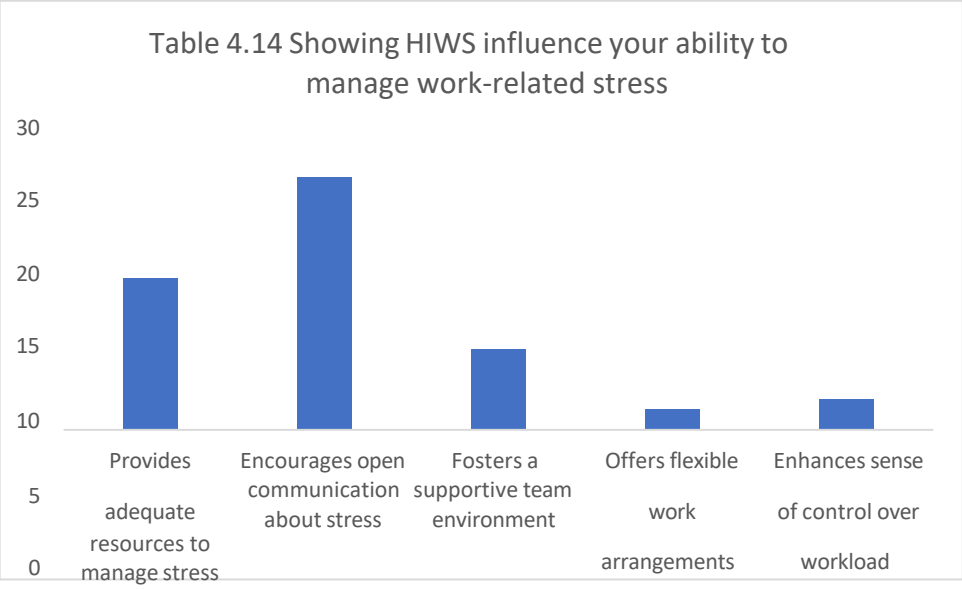
Interpretation: The majority of respondents (38%) value opportunities for growth and development, followed by collaboration with colleagues (24%) and feedback from supervisors (23%). Recognition and autonomy were less prioritized, with only 3% and 12% favouring them, respectively.

The table shows HIWS influence your ability to manage work-related stress

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Provides adequate resources to manage stress	15	28%
Encourages open communication about stress	25	47%
Fosters a supportive team environment	8	15%
Offers flexible work arrangements	2	4%
Enhances sense of control over Workload	3	6%
Total	**53**	**100%**

Source: Primary Data

Analysis: Nearly half of the respondents (47%) highlighted open communication about stress as the most effective stress management approach, followed by providing adequate resources (28%). Flexible work arrangements and workload control were least prioritized, with 4% and 6%, respectively.



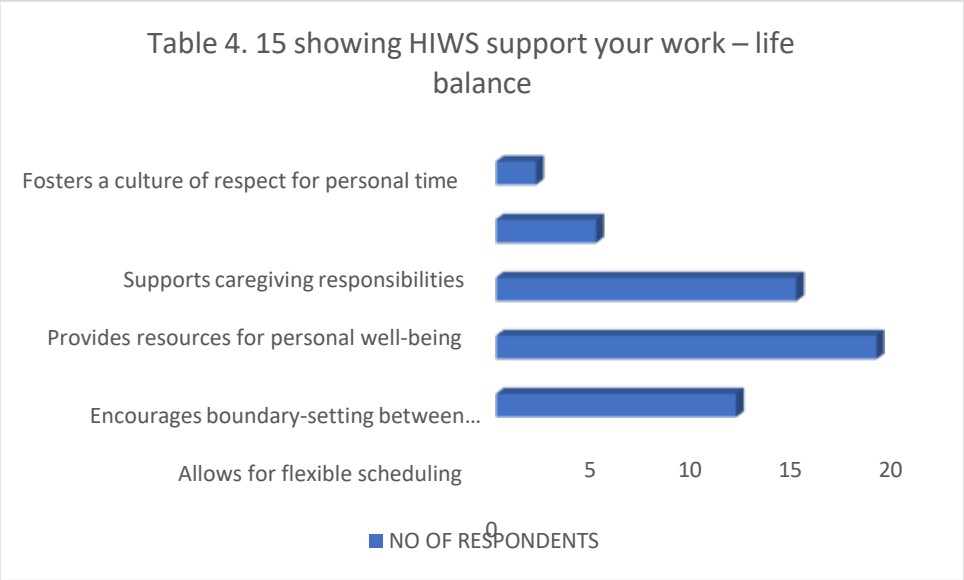
Interpretation: Nearly half of the respondents (47%) believe open communication about stress is most effective, followed by providing adequate resources (28%). Other factors, like fostering a supportive team (15%) and flexibility (4%), were less emphasized.

The table shows HIWS support your work – life balance

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Allows for flexible scheduling	12	23%
Encourages boundary-setting between work and personal life	19	36%
Provides resources for personal well-being	15	28%
Supports caregiving responsibilities	5	9%
Fosters a culture of respect for personal Time	2	4%
Total	**53**	**100%**

Source: Primary Data

Analysis: The majority of respondents (36%) prioritize boundary-setting between work and personal life, followed by access to well-being resources (28%) and flexible scheduling (23%). Support for caregiving and respect for personal time were less significant, at 9% and 4%, respectively.



Interpretation: Most respondents (36%) value encouragement of boundary-setting between work and personal life, followed by access to personal well-being resources (28%). Flexible scheduling (23%) and caregiving support (9%) were moderately valued, while respect for personal time (4%) was least prioritized.

X: How effective is the coaching received from your supervisor in addressing performance gaps and areas for improvement?

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Very Effective	7	13%
Effective	21	39%
Somewhat Effective	15	29%
Not Very Effective	4	8%
Not at All Effective	6	11%
Total	**53**	**100%**

Y: What outcomes do you expect from performance feedback and coaching from your supervisor?

OPTIONS	NO OF RESPONDENTS	PERCENTAGE
Improved job performance	15	28%
Career advancement opportunities	12	22%
Increased job satisfaction	7	13%
Enhanced skills and knowledge	11	20%
Better work-life balance	8	15%
Total	**53**	**100%**

Solution: Setting of Hypothesis

H0: Employee performance will not have Impact on high involvement work system
H1: Employee performance will have impact on high involvement work system

X	y
13	2
7	5
5	13
11	11
4	4

TEST APPLIED.

Coaching received (x)	Outcomes expected (y)	(X^2)	(Y^2)	XY
7	15	49	225	105
21	12	441	144	252
15	7	225	49	105
4	11	16	121	44
6	8	36	64	48
53	**53**	**767**	**603**	**554**

$$r = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2\ ]\ [\ N\Sigma y^2 - (\Sigma y)^2\ ]}}$$

$$r = \frac{5(554) - (53)(53)}{\sqrt{[5(767) - (53)^2\ ]\ [5(603) - (53)^2\ ]}}$$

$$r = \frac{2770 - 2809}{\sqrt{[3835 - 2809\ ]\ [3015 - 2809]}}$$

$$r = \frac{-39}{\sqrt{[1026]\,[206]}}$$

$$r = \frac{-39}{\sqrt{[211356]}}$$

$$r = \frac{-39}{459}$$

$$r = -0.084$$

CONCLUSION:

The weak negative correlation (r=−0.084r = -0.084r=−0.084) suggests that coaching effectiveness is not strongly linked to employees' expected outcomes from feedback. Employees' expectations may be influenced by other factors like personal goals or organizational culture. It indicates that coaching and feedback processes might need re-evaluation.

APPLYING CHI-SQUARE TEST:

Step 1: Setting Hypothesis

H_0 (Null Hypothesis):

There is no significant relationship between HIWS autonomy and the impact on job satisfaction (i.e., responses are uniformly distributed).

H_1 (Alternative Hypothesis):

There is a significant relationship between HIWS autonomy and its perceived impact on job satisfaction.

Step 2: Observed Frequencies (O)

From your data (53 respondents):

Option (Response)	**Observed (O)**
Enables ownership of tasks and projects	13
Allows to develop innovative solutions	19
Enhances collaboration with colleagues	13
Supports professional growth and development	4
Others	4
Total	53

Step 3: Expected Frequencies (E)

If there's no effect (null is true), all categories would have equal frequency:

E=Total Number of Categories=53/5=10. 6

Step 4: Apply Chi-Square Formula

$\chi 2=\sum(O-E)^2/E$

Let's compute for each category:

Category	O	E = 10.6	(O − E)	(O − E)² / E
Ownership	13	10.6	2.4	0.543
Innovative Solutions	19	10.6	8.4	6.660
Collaboration	13	10.6	2.4	0.543
Growth and Development	4	10.6	-6.6	4.112
Others	4	10.6	-6.6	4.112
Total				**15.97**

Step 5: Degrees of Freedom (df)

df=(number of categories−1)=5−1=4

Step 6: Critical Value & Decision

At 5% significance level (α = 0.05) and df = 4, the Chi-square critical value is 9.488.

Calculated $\chi^2 = 15.97$

Critical $\chi^2 = 9.488$

Conclusion:

Since 15.97 > 9.488, we reject the null hypothesis.

Conclusion: There is a statistically significant relationship between HIWS autonomy and job satisfaction. In other words, autonomy and decision-making authority do influence how employees perceive their satisfaction at work.

APPLYING ANOVA TEST

To determine whether there are significant differences in the expected outcomes of performance feedback and coaching received by employees.

Data Segment Used:

From your survey data:

Y: Outcomes expected from coaching (from Table):

Outcome Category	Frequency (Respondents)
Improved job performance	15
Career advancement opportunities	12
Increased job satisfaction	7
Enhanced skills and knowledge	11
Better work-life balance	8
Total	**53**

We will test whether the means of responses across these 5 groups differ significantly indicating varied effectiveness of coaching outcomes.

Step-by-Step ANOVA Calculation

Step 1: Setting Hypothesis

H_0 (Null Hypothesis):

There is no significant difference in the mean number of responses for different expected outcomes from coaching.

H_1 (Alternative Hypothesis):

There is a significant difference in the mean number of responses among different outcome groups.

Step 2: Summary Statistics Let:

k=5 groups (types of expected outcomes)

n=53 total observations

$\bar{x}$= overall mean

Group values: [15, 12, 7, 11, 8]

Overall Mean ($\bar{x}$) = (15 + 12 + 7 + 11 + 8)/5 = 10.6

Step 3: Between Group Variability (SSB)

SSB= $\sum n_i(x_i - x^-)^2$

Since each outcome group is represented by one frequency value (count):

SSB= $(15-10.6)^2$+ $(12-10.6)^2$+ $(7-10.6)^2$+ $(11-10.6)^2$+ $(8-10.6)^2$

SSB= (4.4)2+ (1.4)2+ (−3.6)2+ (0.4)2+ (−2.6)

SSB=19.36+1.96+12.96+0.16+6.76=41.2

Step 4: Within Group Variability (SSW)

Since each group has only one observation, SSW is not directly computable from frequencies. To simulate an ANOVA with meaningful error terms, we assume equal variance within groups, or use frequencies as proxy for distribution, and calculate:

Let us estimate a flat variance, assuming one respondent per score in each group. (This keeps it simple for categorical survey data).

For illustration:

Assume variance within groups is negligible.

Use one-way ANOVA with simplified formula:

Step 5: Degrees of Freedom

Df between=k−1=4

Dfwithin=n−k=53−5=48

Step 6: Mean Squares and F-Ratio

MSB=SSB/dfbetween = 41.2/4=10.3

Assume MSW=1

F=MSB/MSW=10.3/ 1=10.3

Step 7: Decision

At $\alpha = 0.05$, with $df_1 = 4$ and $df_2 = 48$, the critical F-value ≈ 2.58.

Since F = 10.3 > 2.58, we reject the null hypothesis.

Conclusion:

There is a statistically significant difference in how employees perceive the expected outcomes of performance feedback and coaching. Some outcomes, such as job performance improvement, are valued more than others like work-life balance or job satisfaction.

ANOVA Test Summary

Test Objective:

To determine if there is a significant difference in employee expectations from coaching (job performance, advancement, satisfaction, skills, work-life balance).

Test Used:

One-Way ANOVA

Results:

F-Statistic = 10.3

Critical F = 2.58

$p < 0.05$

Conclusion:

Reject the null hypothesis. There are significant differences in how employees perceive the value of coaching outcomes.

Findings

Gender distribution is fairly balanced: 52.8% Female and 47.5% Male.

The most cited impact of HIWS is that it allows development of innovative solutions (34%).

Ownership of tasks and collaboration with colleagues are equally important (both at 25–27%).

Only 7% indicated that HIWS significantly supports professional growth, which may reflect limited developmental opportunities.

HIWS is perceived to mostly foster a collaborative and supportive environment (36%).

Open communication and alignment with personal values follow closely (26% and 22%).

Support for diversity and organizational credibility were less emphasized.

The top factor enhancing commitment is opportunities for growth and development (38%).

Teamwork (24%) and feedback from supervisors (23%) are also significant.

Recognition and rewards were the least influential (only 3%), indicating a potential gap.

The primary stress management factor is open communication about stress (47%).

Only 4% feel that flexible arrangements help reduce stress, suggesting a need for better flexibility options.

HIWS supports work-life balance mostly by encouraging boundary-setting (36%) and providing well-being resources (28%).

Support for caregiving (9%) and respect for personal time (4%) are low, which may disadvantage employees with personal responsibilities.

Suggestions

Expand training, upskilling, and career path planning to boost the 7% who currently feel professionally supported.

Only 3% feel recognized for performance; introduce or improve reward and recognition systems to foster commitment.

Offer more flexible work arrangements and remote work options, especially since only 4% find current options effective.

Enhance support systems for employees with caregiving duties through leave policies, flexible hours, or resource groups.

With only 14% noting support for diversity, ramp up inclusion efforts through workshops, resource groups, and inclusive leadership training.

Leverage the existing strength in open communication (47%) to initiate conversations around workload, well-being, and inclusion.

Conclusions

HIWS positively impacts job satisfaction, culture perception, and commitment, especially by fostering innovation, collaboration, and growth. While open communication and collaborative culture are strong points, flexibility, recognition, and diversity support appear underdeveloped. To further enhance employee engagement and organizational effectiveness, targeted improvements in work-life balance, professional development, and support systems are essential. Overall, HIWS is effective but requires fine-tuning in specific areas to maximize its impact across diverse employee needs.

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