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Adapting to the New Normal: Assessing the Post-COVID Impact on Employee Performance in the Oil and Gas Sector

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Abstract

This study investigates the post-COVID-19 landscape of the oil and gas industry in Gujarat, focusing on how both the industry and its workforce have adapted to the "new normal." By employing a descriptive research design and survey methodology, data was gathered from 418 employees within the sector using simple random sampling techniques. The findings shed light on key aspects that have undergone transformation and the performance of the industry's workforce. the findings suggest that employees in the oil and gas industry in Gujarat perceive their performance positively in various crucial aspects, including adaptability, satisfaction, and collaboration. These positive self-perceptions indicate a workforce well-equipped to maintain productivity and resilience in the face of challenges, particularly the ongoing effects of the COVID-19 pandemic.

Keywords: Oil and Gas Industry, Post-COVID-19, Workforce Adaptation, Employee Performance, Self-Perception, Adaptability, Collaboration, Productivity, Pandemic Impact, Organizational Success.

Introduction

The COVID-19 pandemic, which swept across the globe in early 2020, brought about a seismic shift in the way businesses and industries operate. The oil and gas sector, a vital cog in the global energy supply chain, was not spared from the profound impacts of this unprecedented crisis. The pandemic triggered a cascade of challenges, from sharp declines in oil demand to supply chain disruptions and, most notably, a renewed emphasis on health and safety in the workplace. As the industry grappled with the consequences of the pandemic, a new phrase entered our lexicon: "the new normal." It encapsulated not only the immediate responses to the crisis but also the lasting adjustments and transformations it necessitated (Bathrinath, S., Abuthakir, N., Koppiahraj, K., Saravanasankar, S., Rajpradeesh, T., & Manikandan, R., 2021).

This research project seeks to investigate into how the oil and gas sector has navigated this new normal in the post-COVID era, particularly in the context of Gujarat, a state in India with a significant presence in the oil and gas industry. The state is home to several refineries, petrochemical plants, and oil exploration activities, making it a pivotal player in India's energy landscape. Understanding how the industry has adapted to the new normal in this region can offer insights into the broader challenges and responses faced by oil and gas operations worldwide.

The primary objectives of this research are two-fold: first, to assess the strategies and measures undertaken by the oil and gas industry in Gujarat to enhance resilience in the aftermath of COVID-19, and second, to scrutinize how these strategies have impacted the performance of employees within the sector. Employee performance here is not just limited to job-related tasks but extends to the adaptability of employees to the new work dynamics, their overall well-being, and productivity in this changed environment.

In a world characterized by rapid changes and uncertainties, understanding how organizations adapt and thrive in the face of extraordinary challenges is paramount. This research seeks to provide valuable insights into the intricate interplay between pandemic resilience, organizational response, and employee performance. These insights can guide the industry in Gujarat and beyond, enabling it to emerge from the COVID-19 experience as a more robust and adaptable entity, well-prepared to meet the challenges of the future.

Review of Literature

The oil and gas industry has been significantly impacted as a result of the widespread COVID-19 outbreak. A supply shock, a reduction in demand like we've never seen before, and a global humanitarian catastrophe have all had a negative impact on the sector (Tarei, P. K., Chand, P., Gangadhari, R. K., & Kumar, A., 2021). The sector's financial and structural health is worse than it was during prior crises, and low returns can be attributed to the advent of fracking, excessive supply, and generous financial markets that overlooked insufficient capital discipline (Orazalin, N., & Mahmood, M., 2018). The market is going through its third price drop in the last 12 years, and executives have the feeling that change is coming whether they like it or not (Shahriar, A., Sadiq, R., & Tesfamariam, S., 2012).

What was already shaping up to be one of the industry's most revolutionary times has been accelerated as a result of the COVID-19 situation. Our analysis implies that without significant reform, it will be difficult to return to the attractive sector performance that has historically prevailed (Raut, R. D., Narkhede, B., & Gardas, B. B., 2017). This is despite the fact that the severity and length of this crisis are both unknown at this time. If it continues on its current path and at its current pace, the sector may be on the verge of entering an era that is distinguished by strong rivalry, rapid supply response driven by technology, stagnant to falling demand, investor scepticism, and increasing pressure from the public and the government over the impact on climate and the environment (Yusuf, Y. Y., Gunasekaran, A., Musa, A., Dauda, M., El-Berishy, N. M., & Cang, S., 2014).

In order for the industry to shift away from the existing paradigm, it will need to dig deep and draw on its long and illustrious history of daring structural shifts, innovation, and successful and risk-free operations in the harshest of environments. Companies who do not do so will be forced to restructure or eventually wither away (Sarrakh, R., Renukappa, S., & Suresh, S., 2022).

Objectives

To investigate how the oil and gas industry and its employees have adjusted to the "new normal" post-COVID-19, with a focus on assessing changes in performance, productivity, and work dynamics.

Methodology

The study adopted Descriptive research design, wherein the data was collected through survey method. For the purpose of study, the data was collected from employees working in Oil and Gas industry in Gujarat were considered as the sample. Using simple random sampling technique, the data was collected from 418 respondents through structured questionnaire.

Analysis and Interpretation

This table shows the distribution of respondents based on their gender, age, and designation within the oil and gas industry.

Table No. 1: Demographic Profile of the respondents

		Frequency	Percent
Gender	Male	335	80.1
	Female	83	19.9
	Total	418	100.0
Age	Less than 35 Years	52	12.4
	35 - 45 Years	169	40.4
	45 - 55 Years	153	36.6
	Above 55 years	44	10.5
	Total	418	100.0
Designation	Field Employee	181	43.3
	Machine Operators	152	36.4
	Employer	39	9.3
	Administrative Staff	46	11.0
	Total	418	100.0

Source: (Primary data)

Gender:

- The table indicates that a total of 418 respondents participated in the survey.
- Out of the total respondents, the majority were male, accounting for 80.1% of the respondents.
- Female respondents comprised a smaller but still significant proportion at 19.9%.

This suggests that the survey had a larger representation of male respondents in the oil and gas industry, with a notable but comparatively smaller presence of female respondents.

Age:

- The respondents' ages were categorized into four groups: "Less than 35 Years," "35 - 45 Years," "45 - 55 Years," and "Above 55 years."
- The most substantial group of respondents fell into the "35 - 45 Years" category, making up 40.4% of the total respondents.
- The second-largest age group was "45 - 55 Years," with 36.6%.
- "Less than 35 Years" accounted for 12.4% of respondents, while "Above 55 years" constituted 10.5%.

The majority of the respondents were in the age range of 35 to 55 years, indicating a mature and experienced workforce in the oil and gas industry. However, there was also a presence of younger and older employees in the survey.

Designation:

- Respondents' designations were categorized into four groups: "Field Employee," "Machine Operators," "Employer," and "Administrative Staff."
- The largest group of respondents held the designation of "Field Employee," making up 43.3% of the total respondents.
- "Machine Operators" constituted the second-largest group at 36.4%.
- "Administrative Staff" accounted for 11.0% of the respondents, and "Employers" represented 9.3%.

The data reveals a diverse mix of designations among the respondents, with a significant presence of field employees and machine operators. This suggests that the survey covered a broad spectrum of roles within the oil and gas industry, from fieldwork to administrative and managerial positions.

The table presents the results of a multivariate analysis examining the impact of gender, age, and designation on various aspects of employee performance during the COVID-19 pandemic in the oil and gas industry. The analysis utilizes Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root as multivariate test statistics to assess the significance of the independent variables.

Table No. 2: Employee Performance During COVID-19 Pandemic

Multivariate Tests[a]						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.984	2461.107[b]	10.000	401.000	0.000
	Wilks' Lambda	.016	2461.107[b]	10.000	401.000	0.000
	Hotelling's Trace	61.374	2461.107[b]	10.000	401.000	0.000
	Roy's Largest Root	61.374	2461.107[b]	10.000	401.000	0.000
Gender	Pillai's Trace	.060	2.557[b]	10.000	401.000	.005
	Wilks' Lambda	.940	2.557[b]	10.000	401.000	.005
	Hotelling's Trace	.064	2.557[b]	10.000	401.000	.005
	Roy's Largest Root	.064	2.557[b]	10.000	401.000	.005
Age	Pillai's Trace	.167	2.371	30.000	1209.000	.000
	Wilks' Lambda	.837	2.446	30.000	1177.690	.000

	Hotelling's Trace	.189	2.519	30.000	1199.000	.000
	Roy's Largest Root	.159	6.392[c]	10.000	403.000	.000
Designation	Pillai's Trace	.299	4.468	30.000	1209.000	.000
	Wilks' Lambda	.721	4.623	30.000	1177.690	.000
	Hotelling's Trace	.358	4.773	30.000	1199.000	.000
	Roy's Largest Root	.257	10.367[c]	10.000	403.000	.000

Tests of Between-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Gender	I consistently meet my job performance goals.	1.151	1	1.151	1.834	.176
	My work contributes positively to the overall success of the company.	7.656	1	7.656	12.812	.000
	I effectively adapt to changing work conditions and requirements.	6.668	1	6.668	10.442	.001
	I receive sufficient support and resources to perform my job effectively.	1.152	1	1.152	1.932	.165
	I am satisfied with my own level of performance.	3.392	1	3.392	5.278	.022
	I consistently meet project deadlines and milestones.	5.642	1	5.642	8.279	.004
	I actively seek opportunities for skill development and growth in my role.	.648	1	.648	1.095	.296
	I collaborate effectively with my colleagues to achieve our collective goals.	1.451	1	1.451	2.575	.109
	I feel motivated and engaged in my work.	.687	1	.687	.870	.352
	I believe my performance positively impacts the overall success and safety of our operations in the oil and gas industry.	.407	1	.407	.645	.422
Age	I consistently meet my job performance goals.	6.783	3	2.261	3.604	.014
	My work contributes positively to the overall success of the company.	12.724	3	4.241	7.098	.000
	I effectively adapt to changing work conditions and requirements.	7.799	3	2.600	4.072	.007
	I receive sufficient support and resources to perform my job effectively.	12.985	3	4.328	7.262	.000
	I am satisfied with my own level of performance.	6.983	3	2.328	3.622	.013
	I consistently meet project deadlines and milestones.	2.852	3	.951	1.395	.244
	I actively seek opportunities for skill development and growth in my role.	4.638	3	1.546	2.612	.051

	I collaborate effectively with my colleagues to achieve our collective goals.	11.736	3	3.912	6.943	.000
	I feel motivated and engaged in my work.	5.135	3	1.712	2.166	.092
	I believe my performance positively impacts the overall success and safety of our operations in the oil and gas industry.	6.319	3	2.106	3.339	.019
Designation	I consistently meet my job performance goals.	18.427	3	6.142	9.790	.000
	My work contributes positively to the overall success of the company.	11.331	3	3.777	6.321	.000
	I effectively adapt to changing work conditions and requirements.	17.429	3	5.810	9.099	.000
	I receive sufficient support and resources to perform my job effectively.	10.055	3	3.352	5.624	.001
	I am satisfied with my own level of performance.	11.287	3	3.762	5.854	.001
	I consistently meet project deadlines and milestones.	18.111	3	6.037	8.859	.000
	I actively seek opportunities for skill development and growth in my role.	12.750	3	4.250	7.182	.000
	I collaborate effectively with my colleagues to achieve our collective goals.	19.607	3	6.536	11.599	.000
	I feel motivated and engaged in my work.	24.055	3	8.018	10.144	.000
	I believe my performance positively impacts the overall success and safety of our operations in the oil and gas industry.	16.508	3	5.503	8.723	.000

Source: (Primary data)

Intercept:

The intercept values, as indicated by Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root, are all highly significant ($p < 0.001$). This suggests that the overall model, which considers gender, age, and designation, significantly influences employee performance during the pandemic.

- Gender: The Pillai's Trace for gender is 0.060, indicating a small but statistically significant effect. This suggests that gender has a modest influence on employee performance during the pandemic.
- Age: Age has a more substantial impact, as indicated by Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root (all with $p < 0.001$). This implies that age significantly affects employee performance during the pandemic.
- Designation: Designation has a notable effect on employee performance, as indicated by the significant values across all multivariate test statistics ($p < 0.001$).

The "Tests of Between-Subjects Effects" section presents the F-values and significance levels for various aspects of employee performance based on the factors of gender, age, and designation. Here are the key findings:

- Gender: None of the aspects of employee performance are significantly influenced by gender (all $p > 0.05$). Gender does not appear to have a substantial impact on these performance measures during the pandemic.
- Age: Age significantly affects several aspects of employee performance, including consistently meeting job performance goals, contributing positively to the company's success, adapting to changing work conditions, receiving sufficient support and resources, satisfaction with one's own performance, and believing that performance positively impacts the industry's success and safety (all $p < 0.05$).
- Designation: Designation has a significant impact on all aspects of employee performance during the pandemic (all $p < 0.001$). This suggests that the type of job role or designation within the oil and gas industry plays a substantial role in determining employee performance.

The analysis indicates that age and designation have significant effects on various aspects of employee performance during the COVID-19 pandemic in the oil and gas industry, while gender does not have a significant impact on these performance measures. The results provide insights into how different factors influence employee performance during challenging times.

The table provides descriptive statistics for various key aspects of employee performance in the context of the oil and gas industry during the COVID-19 pandemic.

Table No. 2: Employee Performance – Key Aspects

Descriptive Statistics		
	N	Mean
I consistently meet my job performance goals.	418	4.2440
My work contributes positively to the overall success of the company.	418	4.2057
I effectively adapt to changing work conditions and requirements.	418	4.2488
I receive sufficient support and resources to perform my job effectively.	418	4.2177
I am satisfied with my own level of performance.	418	4.1675
I consistently meet project deadlines and milestones.	418	4.2321
I actively seek opportunities for skill development and growth in my role.	418	4.2225
I collaborate effectively with my colleagues to achieve our collective goals.	418	4.2392
I feel motivated and engaged in my work.	418	4.1962
I believe my performance positively impacts the overall success and safety of our operations in the oil and gas industry.	418	4.2177

Source: (Primary Data)

The mean score for this aspect is 4.2440. This suggests that, on average, employees in the oil and gas industry reported a high level of confidence in consistently meeting their job performance goals during the pandemic. The mean score for this aspect is 4.2057, indicating that employees believe their work has a positive impact on the overall success of their companies. This reflects a strong sense of contribution to the organization's success. With a mean score of 4.2488, employees feel they are proficient in adapting to changing work conditions and requirements. This adaptability is a valuable trait, especially during a crisis like the pandemic. The mean score of 4.2177 suggests that, on average, employees feel adequately supported and resourced to perform their jobs effectively. This is a positive indicator of organizational support during challenging times. With a mean score of 4.1675, employees express a high level of satisfaction with their own performance. This indicates a sense of personal accomplishment and confidence in their work. The mean score of 4.2321 indicates that employees generally feel they consistently meet project deadlines and milestones. This is important for project management and overall productivity. With a mean score of 4.2225, employees are proactive in seeking opportunities for skill development and growth in their roles. This reflects a commitment to personal and professional development. The mean score of 4.2392 suggests that employees perceive effective collaboration with their colleagues to achieve collective goals. Teamwork is a valuable asset in the oil and gas industry. The mean score of 4.1962 indicates that employees generally feel motivated and engaged in their work. High motivation contributes to productivity and job satisfaction. With a mean score of 4.2177, employees believe that their performance positively contributes to the overall success and safety of operations in the oil and gas industry. This reflects a strong sense of responsibility and commitment to safety.

Overall, the descriptive statistics suggest that employees in the oil and gas industry in the given context rated themselves positively in various aspects of performance, indicating a high level of confidence, adaptability, collaboration, and commitment to their work and the success of their organizations. These positive perceptions are essential for maintaining productivity and resilience during challenging times like the COVID-19 pandemic.

Discussion

The findings of this study shed light on the demographic composition and self-reported performance of employees in the oil and gas industry in Gujarat during the challenging period of the COVID-19 pandemic. The substantial gender imbalance, with 80.1% male and 19.9% female participants, underscores a prevailing gender disparity within the sector. While this gender divide is not unique to the oil and gas industry, it underscores the need for initiatives to promote gender diversity and inclusivity, ensuring equal opportunities for all.

The age distribution among the respondents paints a picture of a mature and experienced workforce. A significant majority, 40.4%, fell within the age range of 35 to 45 years, followed closely by 36.6% in the 45 to 55 years category. This suggests that the industry predominantly relies on seasoned professionals, potentially due to the expertise and experience required for its complex operations. However, the presence of younger employees (12.4%) and individuals above 55 years (10.5%) signifies an age-diverse workforce, which can be advantageous in promoting fresh perspectives and knowledge transfer.

Examining designations within the industry, the study revealed a rich tapestry of roles. The prevalence of field employees (43.3%) and machine operators (36.4%) illustrates the significance of these positions in the daily operations of the sector. Administrative staff (11.0%) and employers (9.3%) represented smaller yet integral portions of the workforce. This diversity underscores the complex nature of the oil and gas industry, where a multitude of roles, from on-site fieldwork to managerial responsibilities, are essential for its smooth functioning.

On the aspect of self-reported performance during the pandemic, the data showcased a highly positive outlook among employees. With an average score of 4.2440, employees expressed a strong belief in consistently meeting their job performance goals. This self-assurance is a testament to their dedication and adaptability during challenging times. The mean score of 4.2057 underlines the employees' conviction that their work significantly contributes to the overall success of their organizations, emphasizing their sense of purpose and commitment to the industry's prosperity.

Furthermore, the remarkable mean score of 4.2488 indicates that employees felt proficient in adapting to the dynamic and evolving work conditions and requirements brought about by the pandemic. It reflects their resilience and ability to cope with uncertainty. The high satisfaction score of 4.1675 suggests that employees not only met external performance expectations but were also content with their individual contributions. These positive self-perceptions are instrumental in sustaining motivation and morale within the workforce.

Findings and Conclusion

The findings of the study provide valuable insights into the demographic composition of the respondents and their self-reported performance during the COVID-19 pandemic in the oil and gas industry in Gujarat. The survey encompassed a total of 418 participants, revealing a notable gender imbalance, with 80.1% being male and 19.9% female. This skew towards male representation within the industry highlights a gender disparity. Regarding age groups, the majority of respondents fell within the 35 to 55 years range, making up 40.4% and 36.6% of the total, respectively. This indicates a mature and experienced workforce in the oil and gas sector. Notably, there was also a presence of younger employees (12.4%) and older individuals above 55 years (10.5%), showcasing age diversity within the industry. The study further investigated into the varied designations of the participants, categorizing them as "Field Employee," "Machine Operators," "Employers," and "Administrative Staff." The data showed a diverse mix of roles, with a significant representation of field employees (43.3%) and machine operators (36.4%). Administrative staff and employers accounted for 11.0% and 9.3%, respectively. This diversity highlights the broad spectrum of positions within the oil and gas industry, covering fieldwork to administrative and managerial roles.

Additionally, the study assessed employees' self-reported performance in various key aspects. On average, respondents expressed high confidence in consistently meeting their job performance goals during the pandemic, as indicated by a mean score of 4.2440. They also believed that their work contributed positively to their

company's overall success, with a mean score of 4.2057. This reflects a strong sense of contribution to organizational success and productivity. Furthermore, employees reported proficiency in adapting to changing work conditions and requirements, with a mean score of 4.2488. The mean score of 4.2177 suggested that employees felt well-supported and adequately resourced to perform their jobs effectively during challenging times. They expressed a high level of satisfaction with their own performance, as indicated by a mean score of 4.1675. Overall, respondents perceived themselves as consistently meeting project deadlines and milestones (mean score of 4.2321), actively seeking opportunities for skill development and growth in their roles (mean score of 4.2225), and collaborating effectively with colleagues to achieve collective goals (mean score of 4.2392). They also reported feeling motivated and engaged in their work, as reflected in a mean score of 4.1962. Additionally, respondents believed their performance positively impacted the overall success and safety of operations in the oil and gas industry, as indicated by a mean score of 4.2177. These positive self-perceptions regarding performance are crucial for maintaining productivity and resilience, particularly in the face of challenges such as the COVID-19 pandemic.

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