The Effect of Behavioral Work Environment on Employees’ Productivity in the Oil and Gas Sector in Libya

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Abstract

Businesses must push themselves to think creatively in order to uncover new modes of operation. This study is critical for determining how the behavioural work environment influences the productivity of Libyan employees. Workplace culture and productivity are two distinct challenges that are entwined in the secondary issue. This study provides a strong basis for anyone seeking solutions to the issue of poor job productivity. This research examines these aspects in order to get a better understanding of the behavioral environment's effect on worker productivity. This report gives critical guidance to Libyan authorities on resolving this issue and enhancing the work environment in order to boost productivity. This inquiry gathered data via the use of a questionnaire. Multiple regressions were used to test the hypotheses. The researcher used stepwise and standard regression to accomplish the research purpose in this study. In general, linear regression analysis reveals that all factors pertaining to the behavioral environment are significantly associated with worker productivity. These results may be related to Herzberg Theory and the Maslow Need Hierarchy. To the best of the researcher's knowledge, no scientific study on the effects of behavioral settings on worker productivity has been conducted. That is why it is critical for Libyan government officials and policymakers to comprehend this research.

Keywords: Behavioral factors, Productivity, Employees, Oil and gas, Libya

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Introduction

To create a work environment that supports both company and employee objectives, it is necessary to connect the work environment with the standard of work life. This involves providing workers with opportunities for personal growth, achievement, motivation, recognition, and reward in order to achieve the overall goal of creating high-quality production from them (Wadu Mesthrige & Chiang, 2019). On the other side, a hostile work environment fosters low self-esteem, which contributes to the development of negative behavioural traits in workers.

This is shown most clearly by Libyan government officials' contempt for rules and regulations, preferring to follow their own methods instead (Nwagbarah, 2020). According to Libya's National Center for Intermodal Documentation and Industrial Information (CIID), businesses in the Libyan industrial sector face a variety of challenges, including absenteeism,
carelessness, and corruption (CIID, 2016). Between 1970 and 2005, Libyan Dollar 6 billion (US$4.91 billion) was allocated to the public manufacturing sector, with investments totaling $3.27 billion (as of 2017, Ministry of Electricity, Industry, and Minerals). In the 1970s, the electricity sector accounted for 8% of the country's GDP; this figure fell to 5.9% in 2000, and to 3.2 percent in 2002. (Dartey-Baah et al., 2020). Additionally, the country's attempts to diversify its economy have produced only minor results (Gonzi, 2019). Numerous studies indicate that a variety of diverse approaches to industrial sector management have often failed to enhance industrial sector business efficiency. Libya's government blamed the banking system's collapse on management that relied on untrained workers who did not consider the national interest. This business has no room for sentimentality or niceties, and so must be regulated, since no one in Libya is aware of it (Partain & Abdulhamid Maqnat, 2009). Year on year, Libya's production levels have decreased significantly, as the Economic Brief (2013) analysis indicated. A notable example may be found in the findings of the People's Control and Follow-up Commission (1999), which indicated that over 250 enterprises in the industrial sector, excluding 17 indigenous items, produced at or above 60% of their full capacity. Additionally, the output ratio received did not reach 30%, with the Mineral sector providing 30%, followed by Food, Electronics and Engineering, Cement and Building Materials, and Chemical at 30%, 13%, 8%, and 6%, respectively. According to a CIID (2017) analysis, Libyan industrial firms have had some difficulty fulfilling anticipated production capacity.

Staff are more efficient in a well-equipped workplace, and their productivity and morale cannot be maximised unless their work environment is deemed attractive (Yang & Chen, 2019). Given the above, it is reasonable to assume that bad workplace behaviour in Libyan enterprises is related to the employment environment (Meegahapola & Prabodanie, 2018). The success of a business is also determined by the kind of work environment in which its people operate (Lasyoud, Haslam, & Roslender, 2018). As a result, it is critical to do study on the effect of working circumstances on worker productivity. The purpose of this study is to determine the effect of the work environment on productivity in a setting where 86 percent of productivity difficulties are directly related to the work environment of the business (Bortoluzzi, Carey, McArthur & Menassa, 2018). This research addressed the need to understand how work conditions affect the productivity of Libyan oil and gas industry personnel in order to assist in protecting them from possible risks.

RQ. What is the effect of behavioral work conditions on employees’ productivity in the Libyan oil and gas sector?

a) Is there any effect of hostile behavior on employees’ productivity in the Libyan oil and gas sector?

b) Is there any effect of mistreatment behavior on employees’ productivity in the Libyan oil and gas sector?

c) Is there any effect of workplace relationship on employees’ productivity in the Libyan oil and gas sector?

d) Is there any effect of job satisfaction of work on employees’ productivity in the Libyan oil and gas sector?

**Literature Review**

An increasing amount of research suggests that unfavourable workplace attitudes in Libyan businesses may be related to job satisfaction (Adeinat & Kassim, 2019). Such disruptive attitudes have resulted in decreased productivity and employee turnover. For instance, in
2016, the ratio of non-productive work hours to total working hours was 57%; in 2013, the difference was negligible (CIID, 2018). These circumstances seem to indicate a decline in worker productivity and substandard output (Ministry of International Trade, 2019; National Institute of Statistics and Economic Studies, 2018; Vandewalle, 2013). Reduced production ratios, as well as increased manufacturing costs and decreased product productivity, are seen as inescapable outcomes of economic resource mismanagement on the one hand, while bureaucracy and administrative waste are viewed as detrimental.

Productivity is characterized as what people can generate with little or no effort (Meegahapola & Prabodanie, 2018). Furthermore, a study (Koay, 2018) described it as the enhanced functional as well as firm output with the addition of productivity. It is also known as the ratio of an organization's degree of proficiency in converting input capital (labor, materials, and machines) into products and services. Employee productivity, according to literature (Bortoluzzi et al., 2018), is the result of a combination of employees' abilities, motivation, work environment, and the technology in which they must work, where productivity can be described as "the output gained from a fixed amount of inputs," and organizations can increase their productivity either by reducing their inputs (the cost approach) or by increasing their outputs.

Performance in the services industry continues to improve with lower job absenteeism, less jobs quitting early, and less breaks. The number of units manufactured by a worker per hour may be used to measure an increase in productivity. For the purposes of this analysis, the subjective productivity evaluation approach is used, in which the metrics are based on staff subjective judgments rather than objective activity data. Subjective success (Gomez et al., 2019) can be described as an indicator used to measure individuals' aggregated expectations, behaviors, or evaluations of an organization's product or service. Survey questionnaires are often used to collect subjective productivity results. In March 2017, an independent company conducted a survey on the working climate. The research was carried out with the aid of a survey sent to 203 respondents, and it included the investigation of workplace designs, job satisfaction, and other factors. The majority of respondents (89%) reported that job design is very important in their opinion, with 90 percent of senior officials relating workplace designs to worker productivity. Finally, the study found that if firms change their designs, they have a better probability of increasing productivity. In other terms, nearly 22% of respondents claimed that if offices are built effectively, the company's productivity would improve (Al Damoe et al., 2017).

Workplace motivation can be described as an employee's intrinsic enthusiasm for and interior drive that induces an individual to resolve to take action and drive to complete work-related tasks (Giovanis, 2018). Workplace motivation can be described as an employee's inherent excitement and interior drive that induces him to resolve to take action and have the drive to complete work-related tasks (Koay, 2018). Motivated workers can do well and be motivated to boost company's productivity, which can help an organization boost workplace effectiveness. According to (de Menezes & Escrig, 2019), there is a strong and important relationship between stress management and employee productivity.

Employee behaviour has arisen as an important issue for companies since the advent of competition. It applies to what employees say and do at work (Pradhan & Jena, 2018). According to (Low & McCraty, 2018), there are two types of work settings: conducive work environments and hazardous work environments. A conducive work climate is distinguished by a pleasurable atmosphere offered to employees in order to inspire them to actualize their skills and behaviors. This atmosphere often encourages self-actualization behaviors; for
example, a reckless worker may become a conscientious worker as a result of a positive work environment.

Furthermore, bullying is one of the activities that are not conducive to successful organizational success. As a result, if an organisation is mismanaged, this sort of person is motivated to exercise their desire for authority (Floyd et al., 2016). Furthermore, the results of (D’Cruz & Noronha, 2016) shed light on a dangerous working climate. They revealed that all genders may be bullies and targets of bullies. Targets have a variety of classes of both regular and professional workers. Hostile behaviour strategies may endanger the target's career and kill the target physically, emotionally, and financially. Employers can bear some of the blame for the disintegration of once-skilled workers that fell into the paws of ignoble bullies.

Disciplinary action is a tactic used to regulate staff morale in the corporate sector, but it has been seen to be inefficient in the public sector when companies perceive public employees to be more difficult to discipline (Chen & Wang, 2019). Disciplinary action is described as taking action that would result in the worker being laid off. Termination is less difficult in the private sector than in the public sector. Furthermore, goals spend on time protecting themselves from bullies and little time doing their duties. Bullies can still be paid, but they often fail to perform their responsibilities and responsibilities, and some of them excel by manipulating or destroying their colleagues' work and claiming credit for it. Bullies, in other words, obstruct other employees from carrying out their responsibilities (Agarwal & Rai, 2019).

According to a study conducted by Sweis, Saleh, Sharairhe, and Moarefi (2019), although workers are dissatisfied with the physical conditions of the workplace, they are extremely satisfied with the workplace because of good behavioural workplace conditions. According to the survey findings, the workplace climate has an impact on job success, but the behavioural workplace environment has a larger impact. According to Naguib, Baruffini, and Maggi (2019), changes in the physical architecture of the workplace can result in a 5 to 10% increase in employee productivity. Hosie, Sharma, and Kingshott (2019) reported that workspace behaviour is one of the top three variables influencing success and employee satisfaction.

**Methods**

The major study design for this research was a survey. A survey is conducted to gather primary data for statistical analysis and assessment, from which researchers might derive conclusions and arguments. Finally, descriptive research comprises studying a model in order to better comprehend and explain its properties (Bertrand, Fransoo & Will 2002). The variables' features were described through descriptive research in this study. The sole kind of data obtained is primary data. Primary data were acquired using a personal survey instrument. The research used a quantitative approach. The research focuses on quantifying data collection and analysis via the use of a structured questionnaire. The questionnaire was delivered to a representative sample of responders, and the findings were evaluated numerically. The purpose of this research was to get a better understanding and explanation of the nature of the connection between the variables (Wellman & Kruger, 2003).

The focus of this thesis is on Libya's two state-owned petrochemical firms, the Chemical Complex of Abu Kammash and the Ras Lanuf. There are 400 respondents in this study, 200 from each of the two businesses. The target demographic for this research is an employee in the oil and gas industry. However, the poll from the two organisations included three distinct sorts of workers in the research population: administrative personnel, senior
staff, and junior staff. The sample size is chosen to ensure internal and external validity and to enable generalisation of the results to the population. However, the sample size does not guarantee that it will be representative of the population. The sample plan has an effect on the population representation. Choosing a suitable sample size is a challenge. It is a foundational premise of research. Without a suitable sample size, the research will be unable to discover true impacts on the dependent variable. To establish a solid result, it is essential to choose an appropriate sample size (Rajesh et al., 2010). Inappropriate, insufficient, or large sample sizes continue to have an effect on the research's quality and accuracy (Tashakkori & Teddlie, 2003; Zbaracki, 1998; Sing, 2006). As part of the investigation, 400 questionnaires were delivered to representatives from the Chemical Complex of Abu Kammash and the Ras Lanuf. The businesses in this category were chosen because they represent Libya's only two oil harvesting enterprises. Additionally, their distinct positions are well-matched as a result of the uniformity of the gathered samples, work conditions, procedures, and work environments. Libya is named after the chemical plant in western Libya; its branch in Tripoli is known as Abu Kammash. Ras Lanuf is the name of the chemical complex in eastern Libya.

A questionnaire was employed as the research instrument in this investigation. The data was acquired at Abu Kammash's Chemical Complex and Ras Lanuf. Thus, using this technique was consistent with the idea that surveys are conducted to ascertain particular facts (Pallant, 2011). Additionally, a productivity indicator based on self-assessment (sometimes referred to as perceived or self-reported productivity) is subjective and indirect. A direct subjective output evaluation would concentrate on the workers' productivity. A five-point Likert Scale was used to quantify all factors. The scale went from 1 (strongly agree) to 5 (strongly disagree) (strongly disagree).

Results

Those aged 51 to 60 (30.7 percent), and those aged 31 to 40 (30.7 percent) (29.3 per cent). Around 2.4 percent of employees were under 31 years old, while 1.5 percent were over 60. Male respondents made up a higher share (90.5 percent) of total samples than female respondents (9.5 percent). The majority of responders (62%) had attained an intermediate level of schooling (186). According to the statistics, around 6.5 percent (20) of respondents have a secondary education, 30.7 percent (93) have a bachelor's degree, and 0.8 percent (two) have a master's degree. Additionally, 4.0 percent (12) of respondents have less than five years' experience, 8.8 percent (26) have between five and ten years' experience, 11.3 percent (34) have between ten and fifteen years' experience, 18.8 percent (58) have between fifteen and twenty years' experience, 12.1 percent (37) have between twenty and twenty-five years' experience, 24.8 percent (74) have between twenty-five and thirty years' experience, and 20.2 percent (60) have more than thirty years' experience.

Correlation among the Study Variables

Table 1 shows the Pearson product-moment correlations for variables (hostile behaviour, maltreatment behaviour, employees' connection with managers or colleagues, job satisfaction, and productivity). The Pearson correlation coefficient (r) has a range of values between -1 and +1, according to Dillon, Madden, and Firtle (1993). A value of one implies an ideal positive correlation, whereas a value of one suggests the inverse. Zero (0) correlation means that there is no connection. Benny and Feldman (1985) proposed as a general rule that correlation coefficients larger than 0.8 (very strong correlation) nearly always result in multicollinearity.
Simple linear regression analysis was used to investigate the association between worker behavioral condition and productivity. Regression analysis is statistically acceptable in this situation since the objective is to build a linear connection between the variables and estimate future values based on the values of other dependent variables (Tabachnick & Fidell, 2001). Prior to the evaluation, an inquiry was undertaken under the assumptions of normalcy, linearity, and homoscedascity. There were no statistically significant outliers, as evidenced by Z scores of +3.29 at the p<0.001 level and visual inspection of the box plot. As a consequence, it was judged that the provided assumptions included no severe flaws. As a result, this hypothesis was evaluated using linear regression.

The regression coefficient indicates which variables in the model predict the dependent variable and to what extent these variables are related. Standardized coefficients are values for each unique variable that have been converted to the same scale in order to facilitate comparison and determination of the largest Beta value (overlooking the negative signs). Beta for total mistreatment behavior was 0.220 (sig. =.000), indicating that mistreatment behavior contributed less. Other variables were classified according to their greater unique contributions as follows: Hostile Behavior .201, Beta (sig. =.001); workers’ relationship .177, Beta (sig. =.003). On the other hand, mistreatment behavior was .088, Beta (significance =.140).

Table 2 summarizes the regression results. The adjusted coefficient of determination ($R^2$) indicated that the independent variables explained 0.228 percent of the variation in the dependent variable. This explains why the regression equation statistically explained or accounted for the variation in worker productivity. $F = 9.683$ and $p<0.000$ indicated that $R^2$ was statistically significant. Thus, the general expression is as follows in the form of a regression equation:

Productivity of workers = 3.446 + 0.256 Hostile Behavior + 0.188 Workers’ relationship – 0.285 Mistreatment behavior + 0.292 Job Satisfaction

As indicated by the positive R-value of .504 in Table 2, the predictor variables are positively correlated with worker productivity (the dependent variable). With a standard error of estimate of 1.04261, an R-square value of .254 indicates that the variables accounted for more than 25.4 percent of the variance in worker productivity. The literature corroborates this finding by demonstrating that the ($R^2$), or explained variance, is frequently much greater for operational and financial measures than for more attitude or opinion measures.

The reason for the low proportion of variance explained is as follows. To begin, because this study is focusing on indirect factors, $R^2$ values are typically much lower than those for direct factors. The substantial unexplained variation in worker productivity could be explained by factors other than those examined in this study, such as organizational structure and operational focus. These figures could be higher if workers had more insightful thoughts about the effect of their work environment on their productivity, as many workplaces in Libyan businesses share similar work designs and environments.
Table 2 Regression Analysis Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted Square</th>
<th>RStd. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.504</td>
<td>.254</td>
<td>.228</td>
<td>1.04261</td>
</tr>
</tbody>
</table>

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>84.203</td>
<td>8</td>
<td>10.525</td>
<td>9.683</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>246.759</td>
<td>227</td>
<td>1.087</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>330.962</td>
<td>235</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>3.446</td>
<td>.536</td>
<td>6.434</td>
</tr>
<tr>
<td>HB</td>
<td>-.256</td>
<td>.075</td>
<td>.201</td>
<td>3.422</td>
</tr>
<tr>
<td>MB</td>
<td>-.285</td>
<td>.076</td>
<td>.220</td>
<td>3.751</td>
</tr>
<tr>
<td>WR</td>
<td>.188</td>
<td>.063</td>
<td>.177</td>
<td>2.958</td>
</tr>
<tr>
<td>JS</td>
<td>.292</td>
<td>.073</td>
<td>.226</td>
<td>3.554</td>
</tr>
</tbody>
</table>

The ANOVA demonstrates that the regression model describing the influence of predictor variables on worker productivity is statistically significant at the 95% confidence level, with an F-value of 9.683 (p<0.01). The variables that were identified as statistically significant (p<0.001) predictors of worker productivity include mistreatment behavior and job satisfaction; one variable was found to be statistically significant at p=001 - Hostile Behavior and workplace employees’ relationship at p<0.05.

**Discussion and Implications**

According to Social-Exchange Theory, job satisfaction has a great impact on workers’ productivity. According to the Theory of Social Exchange, employees exhibit either positive or negative behaviors toward the organization only in response to perceived positive or negative actions by the organization (e.g., favourable or unfavourable working conditions for fair or unfair treatment). This would imply that job satisfaction acts as a major contributor variable for workplace behaviors (Thibaut & Kelley, 1959).

Respondents stated that their work environment was substandard, which had a negative effect on their productivity. This study corroborated Sheikh, Ali, and Adan's (2013) findings that work conditions can have a positive or negative effect on productivity. According to Bornstein (2007), organizations with stressful work environments have a negative effect on productivity. On the other hand, when working conditions are favorable,
productivity increases and has a positive effect on service delivery. This finding is consistent with that of Kaplan, Ogut, Kaplan, and Aksay (2012).

Additionally, participants described hostile workplace behavior. A survey was used to elicit information about the participants' actual experiences with aggressive behavior. The findings indicated that Hostile Behavior had a significant relationship with worker productivity. Porath and Erez (2009) found similar results, demonstrating that aggressive behavior has a negative effect on an organization's productivity and profitability. According to Anjum's (2013) findings, hostile workplace behaviour has a diminishing effect on counterproductive behaviors.

Additionally, mistreatment behaviour had a negative and statistically significant effect on worker productivity. According to Newsham, Brand, Donnelly, Veitch, Aries, and Charles's (2009) study, good treatment at workplace was associated with increased employees’ productivity and satisfaction with compensation and management. Along with negative behavior at petrochemical companies, respondents reported having poor working relationships with managers. The study's findings indicated that there is a positive and statistically significant relationship between employee relationships and productivity. This finding corroborated Robbins and Judge's (2011) finding that employee job satisfaction is more likely to increase when supervisors are understanding and friendly, praise satisfactory performance, encourage subordinate feedback, and demonstrate personal and genuine interest in employees. Bruce (2008) discovered that workplace distractions reduced productivity by up to 40% and increased workplace errors by 27%.

Based on the findings above, the work environment in Libyan petrochemical companies should be redesigned to make it more conducive to increasing worker productivity. The work environment should be redesigned in such a way that employees feel satisfied and can freely exchange ideas in order to boost both motivation and productivity (Brenner, Fairris, & Ruser 2004; Anbuoli, 2012).

In summary, the findings of this study demonstrated the detrimental effect of a negative work environment on worker productivity in Libyan petrochemical companies. This study suggests that policymakers consider redesigning such environments to minimize the risk of workers being laid off or having their productivity reduced. A suitable work environment must be attractive, creative, comfortable, satisfying, and motivating in order for employees to feel a sense of pride and purpose in their work.

As a result, it can be concluded that respondents from Libyan petrochemical companies reported low levels of satisfaction with behavioral work conditions. Notably, these businesses should consider the relationship between these variables and worker productivity. According to Judge, Thoresen, Bono, and Patton (2001), job satisfaction is an important contributor to workplace productivity.

Thus, this study demonstrates that work environment factors have an effect on the productivity of workers who work in a hostile work environment. Negative workplace behavior, such as aggressive behavior and a hostile relationship between employees and management/peers, results in anxiety, negative feelings, and job burnout. Negative emotions can be counterproductive, resulting in employees becoming less effective and absent from work. Businesses with a Hostile Behavioral environment frequently fail in comparison to their non-toxic counterparts due to low employee morale, employee inability to generate novel ideas, or employee absenteeism and turnover. According to Appelbaum and Roy (2007), these types of businesses also incur higher costs as a result of lower productivity and less cooperation among employees.
Research Limitation and Future Directions

This study is not free of limitations. Data for this study were gathered in a single instance. It is critical to emphasize that questionnaire surveys with closed-ended questions do not allow for qualitative interaction. While qualitative research is exploratory, this study is strictly quantitative. Secondly, respondents who have negative relationships with their management or peers and have been subjected to mistreatment are frequently hesitant to complain about their experiences; consequently, some respondents have contradictory views on the same question. Future research may concentrate on specific businesses and compare their impacts to those found in this study, therefore verifying these concepts via a representative sample of participants. The research discovered that poor ventilation, light, and incentives contributed to workers' low productivity. At the workplace, there is a culture of maltreatment, a high prevalence of hostile behaviour, anxiety, and bad relationships. Each discovery may be investigated in further depth. Additionally, it is vital to eliminate distractions, abuse, and interpersonal conflicts among workers in order for them to work properly and increase their production. Employers must provide safe, well-lit, and pleasant work areas. Additionally, they must provide incentives to their employees to boost morale and productivity. Future research may also study the effect on a firm's profitability of inadequate lighting, uncomfortable ventilation, and inefficient worker compensation. Studies must take a broader sample of persons into account in order to pinpoint the consequences of poor ventilation quality, inadequate illumination, and the absence of employee incentives, as well as the frequency of bad conduct.

Conclusion

The success of the workplace is a tough concept to grasp and is an area that requires further exploration. Additionally, study on the office environment has risen. Certain organisational elements contribute to the creation of an undesirable work environment, and management should understand how to create a demanding but good work environment that drives people to accomplish the organization's objectives. Ensure that employees have the appropriate support and resources is one method to establish a healthy work environment and employee mental and physical wellness. Because this scientific research is noteworthy, its results merit attention and provide significant information. The results may also give managers and policymakers with knowledge that will help them manage working conditions better in Libyan petrochemical businesses, resulting in a culture of respect, contentment, and eventually productivity.

References


