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IT's Role in Reshaping Work Culture & Organizational Behavior - Remote Working as a Case in Point: A Case Study about "Maktabi" Project of the PDO Company

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Abstract:

This paper presents a brief study on the impact of using information technology in reshaping the work culture and organizational behavior, and its impact on the performance and productivity of human resources at Petroleum Development Oman Company that a case study about "Maktabi" project of the PDO Company. As well as, identify the extent of the variance in using information technology as a remote working and its impact on the performance, productivity, commitment and discipline of human resources with the demographic factors. The research was relying on the descriptive approach. The study focused on 169 employees out of the 300 employees from population of the study by responding to a questionnaire as a primary tool in data collection as well as interviews were conducted with the Maktabi project team lead from HRM department, and infrastructure planning lead from IT department. After processing the data with the statistical analysis software (SPSS version 26), the results of the study showed that there is a relationship between the use of information technology and the performance, discipline and productivity of human resources, this confirms that PDO recognizes this importance in order to improve and develop the performance of their human resources. Also, there is a variation in the impact of the use of information technology and the performance, discipline and productivity of human resources in PDO according to demographic variables except the discipline and commitment that has nothing to do with the level of experience. In addition, PDO Company seeks to adopt electronic management methods by using the information technology optimally that to gain productive human resources and achieve a competitive advantage in the business world. The findings suggest that integrating the information technology within the institution as a necessity to keep pace with the rapid technological, as for technical security, they have to emphasis on security of data by forming a special team for security cyber within each institution.

Keywords: Information technology, remote working, human resources, work culture, organizational behavior, performance, productivity, commitment, discipline, organizational loyalty, demographic factors

1. Introduction

All organizations seek to achieve success in their work, activities, and to continuously improve their performance under the work environment which includes several different departments, including Human Resources Management which is considered one of the most important functions due to its focus on the most important element that is the "human element". It is the most valuable resource and the most influential on productivity, as the organization works to utilize of its resources by working on training them and developing their competence and capabilities to contribute to achieving its goals and profit. On the other hand, information technology is one of the most important developments and changes that have been introduced in the business environment that to facilitate and flexible in practices of the work, as well reducing the costs. From this standpoint, the study focused on the impact of using information technology in reshaping the work culture and organizational behavior, and its impact on the performance and productivity of human resources. The problem lies in the employee's frequent routine and staying in their offices for long hours generates boredom and laziness and thus non-discipline, non-commitment, and poor employees' performance hence inefficiency at work where most companies have adopted some technical systems to work remotely. The study started by referring to the academic literature on work and the common stereotype on work conduct, discipline, and performance evaluation, and how HRM has evolved towards more focus on staff as humans and the different factors influencing their commitment, productivity, and creativity. In addition, commercial firms have also focused on efficiency in the workplace and how can they do better with the least cost.

2. Importance of Research

The effective role that information technology plays in the work environment has made it the center of attention of most organizations due to its vital role in increasing the performance of the organization, achieving the advantage, efficiency and how can they do better with the least cost. In addition, the reason for choosing and highlighting this topic is the employee's frequent routine and staying in their offices for long hours generates inefficiency at work especially who works for hours on end and sitting at one's desk from eight to five o'clock. So, to break these stereotypes, it is better to add the technique of remote working as a modern trend currently which gives the employee flexibility in space and time, as well as continuous creativity and high performance. PDO was selected to study the research due to less studies of the impact of such arrangements on worker productivity is unknown in oil and gas sector. Since oil and gas industries are significant contributors to national economies, impact on productivity reflects on the economy.

The hypotheses of the study

- The emergence of IT and communication solutions that enabled working remotely have contributed to breaking the concepts and stereotypes associated with work such as productivity, commitment, discipline, and performance evaluation.
- The impact of using information technology and working remotely on the performance, productivity, commitment and discipline of human resources varies according to: Gender, Marital status, age group, educational level, and years of experience.
- PDO Company seeks to adopt electronic management methods to gain productive human resources and achieve a competitive advantage in the business world.

3. Theoretical Framework

There is no any doubt that human resources are one of the basic ingredients for the success of the organization, as it focuses on the human factor which is the most valuable resource and the most influencing productivity at all. In this sense, the human resource management is a cornerstone of most organizations as it aims to strengthen organizational capabilities and enable organizations to attract and qualify the necessary competencies to be in a position to cope with current and future challenges. Depending on the efficiency, capabilities, and expertise of those human resources, and their enthusiasm for work, they will be enabling the organization to succeed in achieving its goals. [3]

Therefore, management experts have been interested in setting principles and foundations that help to make the most of every individual in the organization through human resource management. These foundations start from recruitment, training, development, incentives, performance management and evaluation, and everything related to the human element. Bratton and Gold (2007), defined Human Resources Management as a strategic process to manage employment policy in an organization with enhancing the capabilities of its employees and benefit from them to achieve competitive advantages; all these through a distinguished set of integrated employment policies, practices, and programs. [3]

As for organizational behavior is a cultural yield of organizational culture for its essential role in the efficiency of organizational behavior for an individual and group through the values, behavioral rules, and trends that emerge at the organization. As well as the strategic role of organizational culture lies in achieving the goals of the individual and the goals of the organization and reconciling them and guiding the behavior of employees in a manner that achieves the effectiveness and efficiency of the organization. [9]

As regards to work culture, it is a set of ethical, behavioral, and principles values that aim to improve career behavior and productivity. Since a company is said to have a strong work culture when its employees follow the company's regulations, rules, and take on guidelines. However, there are some companies that have a weak culture due to their employees where are reluctant to follow the instructions and are forced to work through strict procedures that the company lists to them. The work culture in any company considers an important and major factor in determining the success, and working to build an encouraging and effective culture within companies is primarily the task of human resources management.

4. Literature Review

4.1. Impact of Remote Work on Labor Productivity

Empirical studies on impact of remote work on employee productivity and performance was conducted by Monteiro, Strom and Velente (2019). The study spanned a period of 5 years between 2011 and 2016 which provides a more reliable representation of the impact of remote work on employee productivity and performance. The study was motivated by the need to assess the effects of the growing trend of telecommute work, especially in developed countries, where remote working comprised of 75% of the work contracts. Short term studies were found to be inconclusive on the subject. The authors based their study in Portugal and used firm-level data to conduct the analysis. The authors further employed cross-sectional survey to collect information about different types of employees in different types of firms and industries, and to identify the influencing factor on the productivity. It was found that in small companies with low-skilled employees, remote working had a negative impact on the productivity. However, if the employees are skilled and professional, they were found to perform well regardless of the size of the firm. In larger firms, skill level did not contribute to changes in productivity when remote work was practiced. These firms were also found to show an increase in productivity under remote work arrangements. The key differentiator was found to be the higher level of research and development in the larger and more established firms that correlated with a higher productivity under remote work arrangements. While the paper has provided a highly detailed and accurate representation of remote work effects on labor

productivity, it does not give much information on the employee characteristics other than skill levels or the share of employees in each firm that are allowed to pursue remote work. [7]

4.2. *Impact of Telecommuting on Employees' Performance*

Onyemaechi et al. (2018) conducted a survey of telecommute (remote) workers to identify the impact of remote work on performance. The parameters that were used to assess performance were better quality of work and speedy delivery of service. The authors initially hypothesized that the flexible working arrangement achieved by telecommuting has a negative impact on the quality of work and speedy service delivery despite anecdotal evidence that suggested otherwise. Review of previous studies indicated a growth in telecommute work arrangements due to globalization and change in business environments worldwide. Additionally, some studies proved that the increased flexibility allowed workers to demonstrate better performance than when in the office environment. Technology was found as the key enabler of telecommute work arrangements. The paper further discussed the factors and enablers of telecommute work by taking Nigerian work environment as a case study. The factors that influence successful implementation of remote work were found to be "eligibility, personal factors, professionalism, dependability, communication and resourcefulness". [8]

The authors distributed questionnaires to 100 employees working in the telecommunications industry to determine whether the remote work can positively influence quality of work and speed of service delivery. It was found that more than half of the employees agreed or strongly agreed that telecommute work improves the speed of service delivery. In the case of the quality of work, it was found that though the response was positive, a weak relationship was identified between telecommute work and quality. Based on the findings, the authors concluded that telecommute work should be continued with since the service delivery was accelerated. However, increased monitoring and supervision should be implemented to enhance the quality of work. [8]

The paper by Onyemaechi et al. (2018) demonstrated a positive response to telecommute work among employees. However, the survey was found to be highly subjective in nature and did not collect responses from supervisors or management who are better qualified to rate the quality of work. The reliability of results by surveying employees themselves can be questionable. An objective measure should also be included in the study to determine the improvement in work quality. [8]

4.3. *Addressing the Gap in Research*

Previous research was largely fragmented and focused on industries such as telecom where remote work could be easily integrated. Remote work in other industries, especially heavy industries like oil and gas, are less studied and the impact of such arrangements on worker productivity is unknown. Since oil and gas industries are significant contributors to national economies worldwide, impact on productivity reflects on the economy. As a result, there is a need to contribute to address this gap in research and contribute to the growing collection of information on remote work by substantiating evidence with contextual information. Additionally, in developing countries like Oman, the digitization of operations is only in progress and should be supported with research for the move to be sustainable. This research aims to address these issues.

5. Methodology

This research followed a descriptive methodology that the steps for applying the descriptive approach are summarized as follows: defining and describing the problem, formulating objectives and hypotheses, determining the data and information that must be collected, collecting data from different sources and using the methods that have been identified, organizing data and information with analyzing and interpreting its, formulating results and conclusions, and developing appropriate recommendations. Here, a descriptive survey type of research has been used which is the type of research that all members of the research population or a sample of them are questioned in order to describe the phenomenon studied. So, the Quantitative Research Method has been used through conducting e-questionnaires for the target company (PDO) as well as the Qualitative Research Method has been used through conducting in-depth interviews with a Policy Advisor (Maktabi Project Team Lead), and Infrastructure planning lead from PDO Company. Additionally, research has relied on some previous studies -literature reviews-, E-books, and electronic websites.

A probability sampling technique was chosen with are selected on the basis of the rule of probabilities, each member of the study population has the same opportunity to choose among the members.[6] The random sampling was conducted because the target study population is homogeneous, moreover, the approach for selecting the random sample was List Sampling that selecting employees through a list of all the names of the study population in which the elements of this sample were selected from tables of random numbers arranged in columns and rows then the sample was chosen from each row seventeen employees, wherefore the selected sample size was 169 employees. The sample size determined based on Krejcie and Morgan sampling technique table for Sample Size Determination. [5]

6. Findings

6.1. *Main Findings of the Research*

- The general Mean for the performance and productivity section tends to Agree by 4.1 as a positive indicator of performance and productivity.
- The high percentage for all questions of the performance and productivity section is strongly agreed. It is evident through the answers that most of them strongly agreed, and agreed on the existence of a suitable

work environment when working remotely and feel comfortable when working on their own outside their offices, as well they mastering their work and paying attention to details in their tasks. As long as there is a good performance, this leads to high productivity. Also, it is noticeable that they are willing to make greater efforts to help the company succeed and they agreed on the current policies and work culture applied in the company which leads to achieving the goals through remote work. The higher the performance, the more it indicates the user's comfort and acceptance of working remotely and thus enhances their motivation and organizational behavior. Moreover, this generates functional loyalty to them and hence leads to high productivity.

- The general Mean for the commitment and discipline section tends to Agree by 3.9 as a positive indicator of commitment and discipline in their work.
- The general Mean for the usage of Maktabi systems and the technical readiness section tends to Agree by 4.11 as a positive indicator of technical readiness. It is evident from the answers that mean that users accept the technical readiness and their ability to deal with the system smoothly and easily, as well as the presence of technical support in the event of any malfunction.
- Spearman's correlation coefficient between the usage of Maktabi systems and the technical readiness section with performance and productivity is .664** which means there is a statistically significant correlation between variables at the 0.01 level with 0.99 confidence level. So, the relationship between it is positive and strong.
- The correlation coefficient between the usage of Maktabi systems and technical readiness with commitment and discipline is .727**, there is a statistically significant correlation between variables at the 0.01 level with 0.99 confidence level. So, the relationship between those variables is a positive and strong relationship.
- There is a strong positive relationship between performance and productivity with commitment and discipline that is .919** which means there is a statistically significant correlation between variables at the 0.01 level with 0.99 confidence level.
- The highest means in the two dependent variables (the performance and productivity) and (the commitment and discipline) are in terms of gender "male", in terms of marital status "single", in terms of age group "30-45", in terms of educational level " Bachelor & Postgraduate", in terms of experience "From 10 to less than 15 years" in both dependent variables.
- The second hypothesis was verified by relying on testing the differences between two samples by T-test for gender and by ANOVA test for marital status, age group, educational level, and years of experience.
- The hypothesis was confirmed on the existence of variance and differences except for discipline and commitment, it has nothing to do with the level of experience.
- It is clear that singles are more performing and committed to working remotely because married people may be busy with married life and children at home, unlike singles. Also, the females were low-performing and engaged and possibly unable to balance remote work and home life. Moreover, employees with undergraduate and postgraduate degrees were more performing and committed to work, and this may indicate their level of education and knowledge to handle IT smoothly and easily, unlike the least knowledgeable. Those with more than 10 years of experience were more productive and committed, and this may indicate that their experience is sufficient to work on their own, unlike those with less experience who need help from their colleagues and supervisors.

The results of the study showed that there is a relationship between the use of information technology and the performance, discipline and productivity of human resources. This confirms that PDO recognizes this importance in order to improve and develop the performance of their human resources. Also, there is a variation in the impact of the use of information technology and the performance, discipline and productivity of human resources in PDO according to demographic variables except the discipline and commitment that has nothing to do with the level of experience. In addition, PDO Company seeks to adopt electronic management methods by using the information technology optimally that to gain productive human resources and achieve a competitive advantage in the business world. The findings suggest that integrating the information technology within the institution as a necessity to keep pace with the rapid technological. The idea of working from home may represent a dream for many, however, Oil Development Oman has made its way to make the dream a reality for its employees! From Al-Manhal magazine which was published in 2018 by Petroleum Development Oman, it gives an overview of the company's most important initiatives and progress in all respects. Among their initiative was the Maktabi project which was its banner "MAKTABI: The agile way of work". As was the saying of the managing director, Raoul Restucci, that the project aims to change in work arrangements, creating a work-life balance, flexibility in work, and enhancing productivity. [2] They began as pilot project with the number of participating employees was approximately 49 until the expansion of the project and included 300 employees. Additionally, one of aims of Maktabi project is to ensure trust and comfort to all employees and creating a culture of trust in company by enhancing the mutual trust among the company and its employees. Actually, when employee feels that he is trusted to work autonomously hence, his motivation and productivity increase. Also, the benefits of Maktabi project is providing better flexibility, work-life balance, reducing travel time and utilizing the extra hours for extra work. Therefore, Maktabi project is one of the successful and distinguished initiatives. [1] [2]

7. Conclusion

Information technology has become a critical component of organizational strategies to achieve success and survival in a competitive market. Parallel to various technological advances, theories that influence business activities have also evolved. There has been an increasing realization of employee care and development as an investment for better productivity and performance or organizations. Human resource has been identified as one of the most important assets of organizations. The fact that a good workforce is the best competitive advantage a company can develop has resulted in a move towards employee management practices in recent decades. A part of this is to recognize employee needs and develop business arrangements that are beneficial both to the worker and the employer. This has been the basis for the emergence of flexible working as a practice. Among these companies that have implemented the flexible work mode is the Petroleum Development Oman, whose project called (Maktabi) has been studied in this research. Through this study it became clear to us about the role of information technology in reshaping the work culture and organizational behavior in PDO Company. The hypothesis confirmed that we can no longer look at work the same old way of going to an office, working hours, sitting at one's desk from eight to five, but more need to become more realistic by measuring the real outcome/product of an individual, how the system places trust on staff which in turn produces moral commitment towards work. The research objectives were achieved. Petroleum Development Oman Company was selected to study the research due to less studies of the impact of such arrangements on worker productivity is unknown in oil and gas sector. Since oil and gas industries are significant contributors to national economies, impact on productivity reflects on the economy.

8. Recommendations and Future Work

The study concluded some recommendations which are as follows:

- Integrate the information technology within the institution as a necessity to keep pace with the rapid technological developments and changes in the current era.
- Appeal public and private sector to focus efforts on building a new work culture among institutions and individuals, a culture that would contribute to the success of implementing flexible working "Remote work". (This is what has been achieved in PDO Company by implementing the Maktabi project)
- Appeal to establish a central authority for comprehensive support that to supervise remote work systems and encourage those interested in this field, and spread awareness about remote work and its applications.
- As for the current crisis of COVID-19, I recommend that for future work: Introducing the fundamentals of remote work in the IT subject in schools as important basics.
- Appeal to government agencies, universities and scientific research centers to direct and support research and studies related to remote work, in order to reach an explanation of the basics of the concept of remote work until to develop a necessary policies to take it up.
- The need to benefit from the experiences of countries that have adopted remote work systems, as well as benefit from the experiences of companies, institutions and global and local leaders in the field of applying the concept of remote work.-The necessity of conducting training courses in order to increase the skills and expertise of human resources to enable them to deal with information technology.
- As for technical security, emphasis on security of data by forming a special team for security cyber within each institution.
- Ensure that all company equipment, including cell phones and laptops are protected with appropriate security software
- Ensure that updates for operating systems and applications are implemented
- Restrict access privileges for employees connected to the corporate network
- Reminding co-workers of digital security basic rules such as, not clicking on links in anonymous emails, using strong passwords, and making sure employees are aware of the risks of responding to spam.

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