A Conceptual Study on Artificial Intelligence in Human Resources and its Effects on Future

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Abstract: *A conceptual study on Artificial Intelligence in Human Resources and its Effects on Future – A case study of Shell Marketing Company SAOG Sultanate of Oman. This research delves into the matter of how the upcoming prominent technology adoption could lead to productive value for the Human Resource (HR) function. The research derivers primary inputs from specific departments of the HR using a Likert Scale based closed ended questions using survey method. The research utilized open ended questions in form of interviews and panel discussions on multiple occasions to derive a better understanding on the subject matter. The research utilizes both qualitative and quantitative form of analysis to present a comprehensive picture and utilizes secondary sources of information to corroborate the data derived.*

Keywords: *Artificial Intelligence, Human Resource, Productive Value, Technology.*

1. INTRODUCTION

Artificial Intelligence (AI) is an emerging technology that appears to be promising across different industries and sectors (O'Connor, 2020). It has become a prominent subject which is paving the way for new dynamics of business. AI is still at a nascent stage which is expected to deliver significant returns on the investments as the potential is significant. Shell Oman Marketing Company is among the leading fuel retailers in the country that has operated over five decades (Shell Oman , 2021). Going forward the company faces a challenging situation as the rising crude oil prices and its proportionate impact on the fuel prices is a double edges sword. While the high prices have a favourable impact on the Government revenues it affects the consumers adversely as the rising fuel prices discourages spending. The company with the resources at its disposal would ultimately seek certain degree of optimization which also involves the various functions within the organization.

Artificial intelligence is used in many areas, including recruiting, selection, hiring, performance analysis, employee data collection, real-time information, and correct information. The employment of artificial intelligence in the human resources department, on the other hand, necessitates the creation of a skill set for employees. Adapting and understanding artificial intelligence technologies, as well as becoming adept in the area of digital technology, may be difficult for employees.

Tianyi, (2021) investigates artificial intelligence's definition and categorization. Based on theories on business dynamic capabilities, excellent marketing, and consumers' perceptions of products and values as well as artificial intelligence technology characteristics, the process of artificial intelligence technology integration and commercialization is developed An organization's features, technological innovation and commercialization integration, integration results, consumer perception of product and service brand value, and the technical environment are all part of the mechanism's components. According to this research, the relevance of market expertise and customers' need for integration are highlighted. As part of our investigation, we look at how artificial intelligence is employed in management, as well as the potential privacy and ethical issues that arise.

QiongJia, (2018) works shows that the six HRM pillars and the present status of AI technology are combined to provide a conceptual AI framework for HR management. Face-recognition and natural

language processing can be used to create an interview system; robots and visual scanning can assist people in training and development; performance management procedures can be used in conjunction with i.e., intelligent robots. Robotics and voice interface technology may be used with employee relationship management to build an enterprise consulting system. Leap.ai recruitment and Baidu online training were used as case studies to study features of AI hiring and training. Finally, the significance of the results in practice and in future research is emphasized. " The AIHRM conceptual model provides suggestions and directions for the advancement of artificial intelligence in human resource management.

Methods based on artificial intelligence (AI) have shown to be effective in altering healthcare. Machine learning classifiers have shown good growth in health sector, however there are still issues with evaluating different large electronic health record (EHR) data, according to (Huiying, 2019). Our findings suggest that MLC may query the EHR in a manner that is similar in nature to doctors' hypothetical deductive reasoning, revealing links that early statistical techniques missed out on. Automated natural language processing is used to retrieve clinically relevant information from electronic health records. Accuracy in various organ systems is equivalent to that of professional doctors in the diagnosis of common pediatric illnesses, as shown by our model. Using artificial intelligence-based solutions to help doctors handle big data, complement diagnostic, and assist in decision-making when the diagnosis is ambiguous or challenging has been shown in our research. This technology's advantages might be felt all over the world, even though it is most effective in locations where there is a shortage of healthcare professionals.

2. AIM AND OBJECTIVES OF THE STUDY

The aim of this research is to conduct a comprehensive study on the usage of Artificial Intelligence in Shell Oman Marketing Company in the domain of Human Resource Management **for future.**

Research Objectives

1. To evaluate the role of Artificial Intelligence in an organization
2. To investigate the key challenges in adoption of AI in the HR domain
3. To provide necessary recommendation in adaption and specifics of AI in HR for the company to support the future vision and mission

Limitation of the Study

The study is limited to Shell Oman Marketing Company and its function of Human Resource Management. The study does not take account into the viewpoints of the other functions which may or may not have a say on the subject matter. The study does not seek to quantify the impact of the AI as such and nor does it demonstrate what is the potential impact on the bottom line of the company or for that matter any profitability level..

3. RESEARCH METHODOLOGY

3.1. Research Design

This study employs a mixed-method approach to investigate the role of artificial intelligence in human resources at Shell Oman Marketing Company SAOG and its impact in the future. The research used a methodological approach based on an objective investigation of detectable events using quantitative analysis (Maxwell, 2021). In social inquiry, the qualitative investigation focuses on the subjects of psychology, socialist ideology, and anthropology. As a result, qualitative tests allow respondents to be fully investigated, scrutinized and questioned to gain a better understanding of their motivations and sentiments.

3.2. Population of the Study

Employees of Shell Oman Marketing Company SAOG make up the majority of the study's population. The study's target population was around 325 people, which describes the amount of internal and external hires, however actual participation was fewer. The demographic composition and dispersion are depicted in the next chapter as a spread out.

3.3. Sampling Technique and Sample Size

The study employed a non-probability approach (Convenience sampling). This method is more reliant on the researcher's ability to choose sample items. Convenience sampling is used in market and industry research to get information on a brand's country's reputation from the audience's standpoint. It's also utilized to get feedback on recently released items or a small-scale initiative (Rahman, 2020). The sample size is 54 people, with a focus on those involved in the Shell Oman Marketing Company SAOG. This strategy allows information to be easily accessed in a short time. The issue is the possibility of bias in the generated inputs.

3.4. Data Analysis Technique

The data is appraised using graphs delivered by the Google Form, which aids to increase efficiency by automating certain of the progressions. A restricted type descriptive analysis is performed in this study. The purpose of the data analysis is to discover the general ideas and concepts associated with the Shell Oman Marketing Company SAOG. Depending on the information, content exploration is practiced for the replies acknowledged from the survey.

4. DATA COLLECTION AND DATA ANALYSIS

The data analysis is based on the survey conducted amongst the employees of Shell Oman Marketing Company S.A.O.G. The research is exclusively focused on the Human Resource Function and thus derives inputs from the key departments in Human Resource. The interview is conducted among the four managers that were available at the given point which included a panel discussions as well.

Demographics of Shell Oman Marketing Company – HR Function

The below section illustrates the demographics of the employees that participated in the study from Human Resource function of Shell Oman Marketing Company.
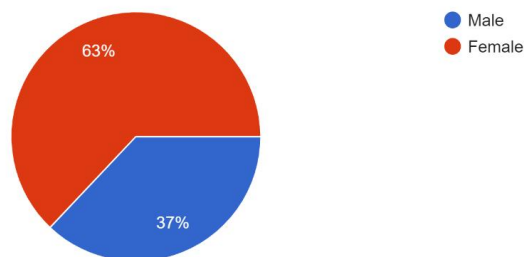

Figure1. *Gender breakdown*

The convenience sampling resulted in majority of the participants being female as Shell Oman is also known for the fair gender representation in their company. This is an important corporate directive and can be seen it is implemented. Of the 54 respondents, 34 were females and 20 males.
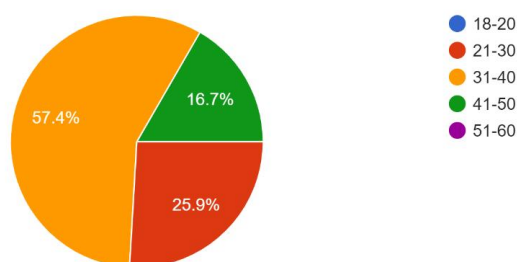

Figure2. *Age Group Breakdown*

The age group is largely split across three groups with 31 respondents in age bracket of 31-40 years, 14 respondents in age bracket of 21-30 years and 9 respondents in age bracket of 41-50 years. This indicates some kind of well balanced mix based on the different roles which also encompasses the seniority factor as well.

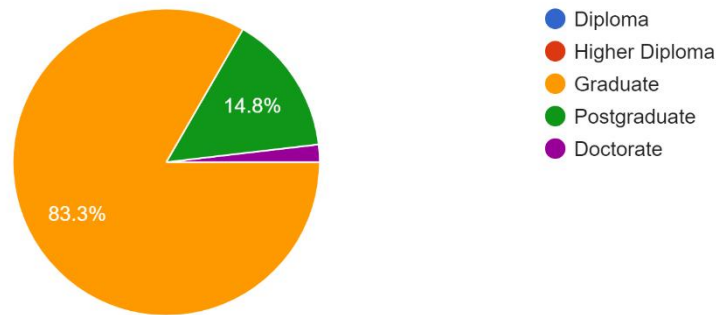**3. Please state your Academic Qualification**
54 responses

Legend:
- Diploma
- Higher Diploma
- Graduate
- Postgraduate
- Doctorate

14.8%
83.3%

Figure3. *Academic Qualification*

The above graph indicates that the employees' minimal level of education is at Undergraduate with 45 of them being graduate. There are 8 respondents with Post Graduate Degree and one person with Doctorate. This indicates that there is certain scope for the vast majority of the employees to engage in further learning. The room for acquiring new skills and knowledge is certainly there as there are different levels that are available for attainment.

4. Please state your work level
54 responses

Legend:
- Individual Contributor
- Subject Matter Expertise
- Team Lead/Supervisor
- Manager
- Executive Management
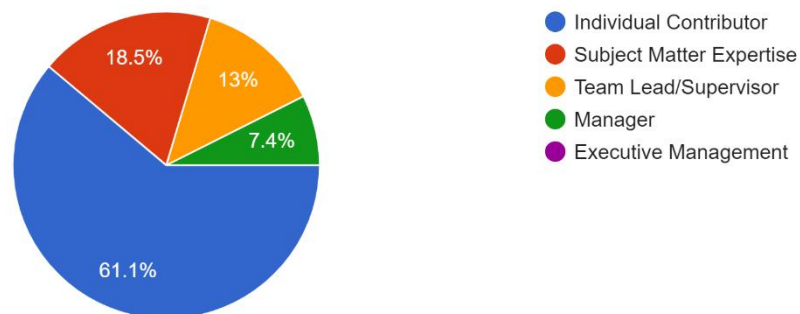
18.5%
13%
7.4%
61.1%

Figure4. *Employee Seniority in Function/Department*

The above graph indicates that vast majority of the respondents, 33 of them are at an individual contribute level which means they are not holding any kind of seniority in terms of having specific teams reporting to them. From the pool there are 10 respondents that are subject matter experts across key departments. There are also 4 managers as well who have taken an interest in the subject.

5. State which department under HR you are working for
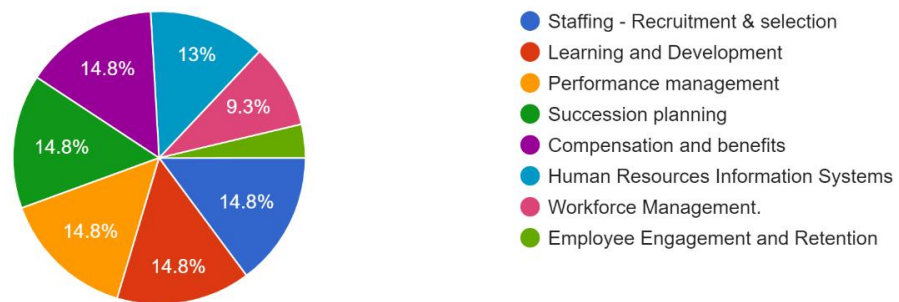
54 responses

Figure5. *Background of Employee Departments in HR Function*

The above graph indicates the respondents are from all key departments have participated. Based on the multiple interactions it is indicated that most of the employees across the different departments have participated in this. This does mean the topic has generated a significant interest among the participants as it has to do with the future of job prospects. It is after all delving into an important aspect of the career going forwards. It is to be noted that given the relatively short time frame certain participants have missed out.

1. Qualitative Data Analysis

    Analysis of Survey

The respondents were asked closed ended questions based on a Likert Scale. Each set of question is linked to the Objectives set in Chapter and ultimately seeks to arrive at the aim.

	Likert Scale				
Rating Application	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5

Figure6. *Likert Scale*

Objective: To evaluate the role of Artificial Intelligence in an organization

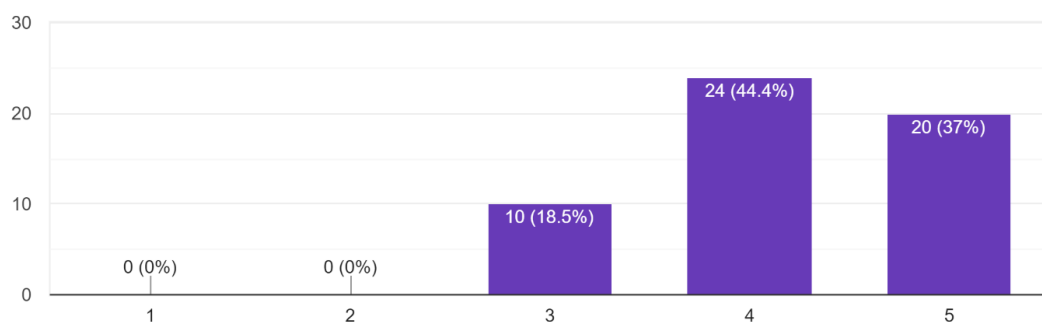In facilitating Product and/or service development

54 responses

Figure7. *In facilitating Product and/or service development*

Based on the recent developments of AI across the spectrum it is envisaged that there is a serious potential in product development. This is due to the fact AI has the capacity and capability to lead to enhancements for the products. AI can deliver the optimizations on different levels of product features.
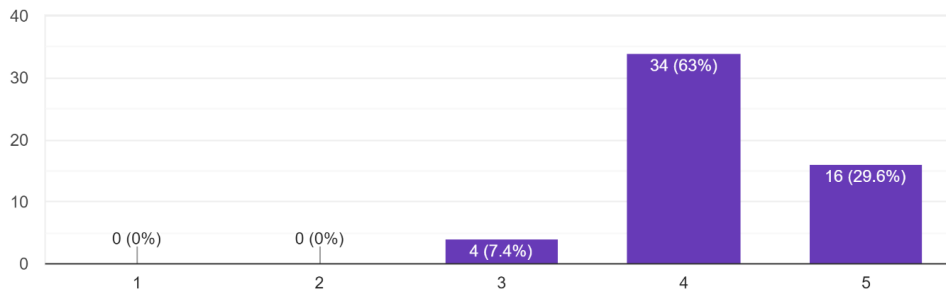
Figure8. *Supporting Manufacturing*

The respondents are of the opinion that AI can support different types of manufacturing through focus on yield energy which would also comprise of the throughput optimization. AI can certainly lead to gains in areas such as Predictive maintenance which is important for an organization like Shell Oman that has assets that are vital to its operations.
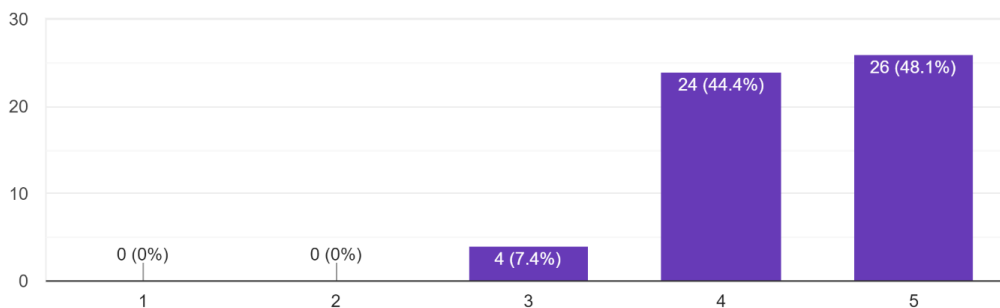

Figure9. *Enhancing Service operations*

Employees are of the opinion that AI has a scope in service operations of the company, specifically in areas such as the Predictive service and interventions as the AI is able to factor in the variables and relay an output for informed decision making. It also has scope for optimization.
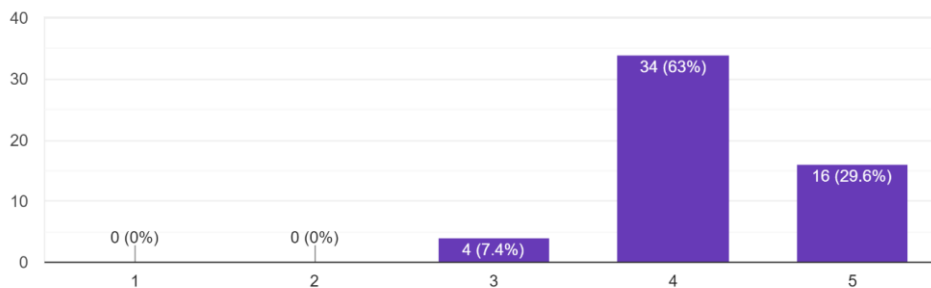

Figure10. *Seamless Human resources*

Activities such as talent management and performance management can be optimized to different levels although this opinion does not relay a strong agreement indicating there is a level of skepticism involved due to the uncertainty factor. It can be also observed that owing to ambiguity that exist on the matter.
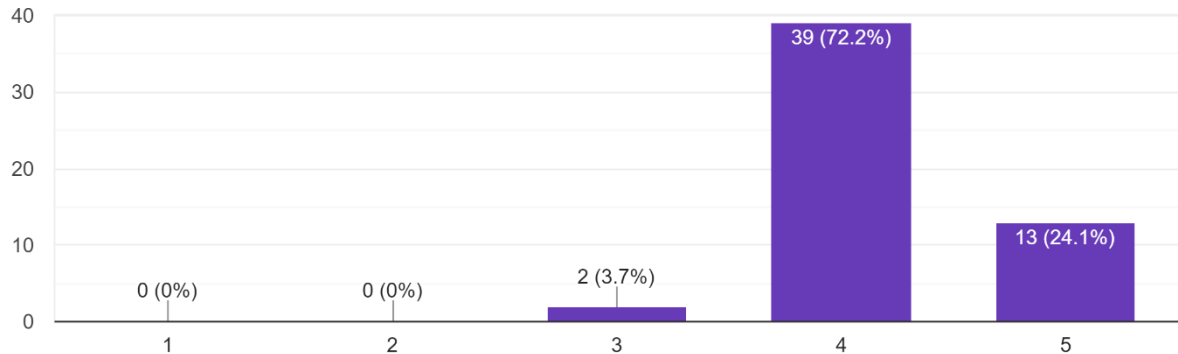

Figure11. *Deriving Marketing and sales*

Keeping Customer-service analytics and Customer segmentation in the forefront that AI can help the organization ramp up its marketing and sales. This would happen effortless as the analytics would play a central role in enabling a competitive advantage as it illustrates fast decision making.
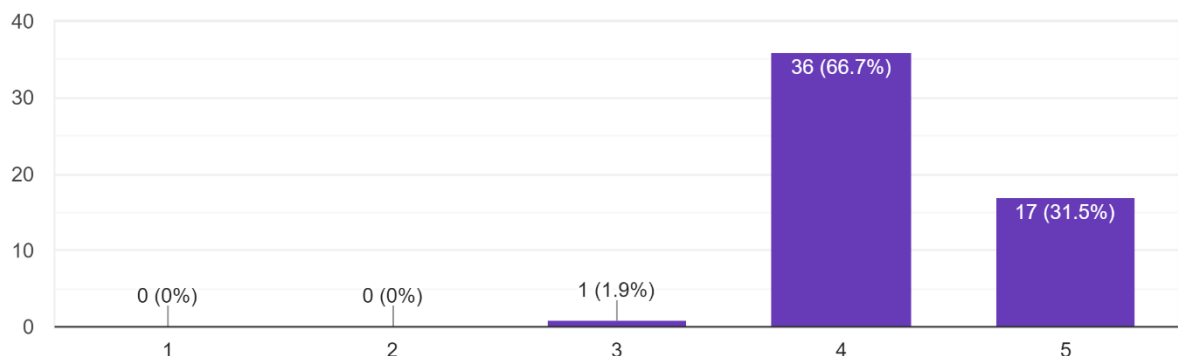

Figure12. *Leading Supply-chain management*

Key areas that AI would be useful in these regards are optimization of the Logistics-network given the fact Shell Oman operates approximately 200 retail outlet. Inventory management is vital as the company uses Vendor Management Inventory (VMI) to ensure that retail stations do not face dry out and there is lead time. AI can certainly supplement this by implementing and bringing certain degree of automation Given that Shell Oman operates not only retail units but also a lubricant plant that needs replacement of parts. The optimization is extended to the plant requirements which does needs both routine and non-routine maintenance.

Execution of Strategy and corporate finance

54 responses
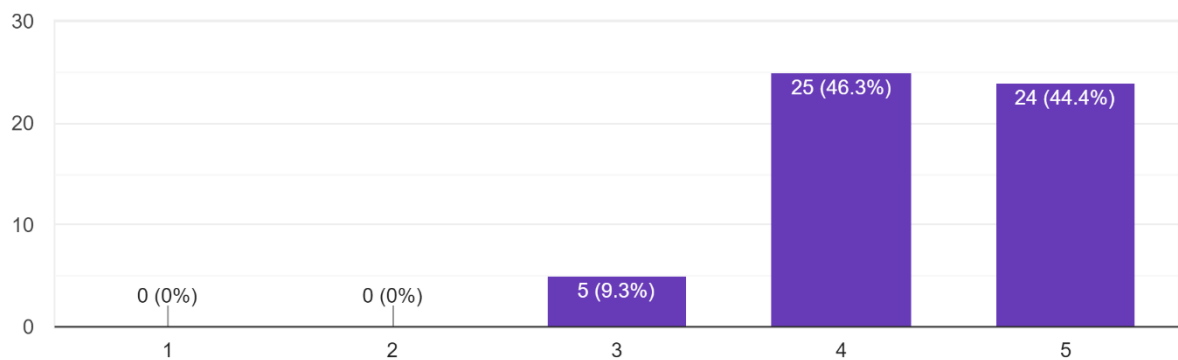
5. OPEN ENDED QUESTIONS – INTERVIEW QUESTIONS

The following questions were asked to the managers to derive insights in relation to the objectives that were set prior.

1. Why the AI adaption has materialized in the company?

Oman in general has been an early adapter of technologies with the rest of the major economies but AI has yet to materialize in the mainstream. It is still relatively new and being subjected to various levels of scrutiny. To a large extent AI in Oman is still not well understood and therefore even the industry at large would like to spend some time in exploring AI for a while. Lessons learnt from other implementations would be helpful as well.

2. Do you think AI could adversely impact the employees in HR?

In overall scheme of things, it would definitely lead to redundancies of roles but that means the resources cannot be diverted to another field wherein value can be extracted.

3. What could be the potential remedy in regard to the adverse impact?

A clear and concise plan that would serve as a roadmap. Should the employees be taken onboard from the beginning it would minimize the impact. All the roles and responsibilities need to be reassessed and evaluated in accordance to the new functionality. Setting clear expectations from the start of the AI phase would be helpful.

4. What would be key areas that AI can be utilized effectively in a sustainable manner?

All the functions of the HR do have a massive scope. But the solutions would need to address all the aeras in these regards.

5. How can the existing functionalities of HR be improved within the company using AI?

Value additions can be derived through automation of numerous tasks that do not generate any benefit through human intervention. It can be enumerated in form of reducing the time that employees from the other functions spend to get something done.

6. How can the AI elevate the human resource functionality and keep its relevancy in the organization?

Change of the image of HR function. At present most of the functions in the organization and for that matter even the industry does not see HR as a real contributor to the profitability of the organization in both tangible and intangible forms. It is deemed as unnecessary cost center that is thrusted upon the rest of the teams. AI can free up the HR employees from repetitive tasks and go about adding value through strategic initiatives by applying the principles of Strategic Human Resource Management (SHRM)

7. How can the AI support the Vision and Mission of the company going forward from HR perspective?

Bringing in talent that could actually lead to paradigm shift and sustain the business as the dynamics of the fossil fuels are undergoing a change. For Shell Oman Marketing Company to stay relevant it would need human capital that can bring in a relevant business model.

8. What is the timeline that is expected where AI would be an integral part of the HR functions?

This is dependent on when does Oman and Global economy recover from the current COVID-19 pandemic which would increase the prospects of economic activities. This would translate to AI project being taken. It is safe to assume that it would materialize in span of two to five years.

9. Do you see the scope of AI expanding to other areas of the organization?

All the functions of Shell Oman are expected to benefit in one way or the other way. While the scope would be wary from one function to another there is benefit that could be derived if the implementation done is right.

6. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

1. The inputs for first objective do relay the fact Artificial Intelligence (AI) has significant scope for the organization although it is varied across specific areas of the function and as such the individual departments

2. The inputs for the second objective also indicate that Artificial Intelligence can play central role in the Human Resource (HR) domain. It not only reduces the burden on the HR employees but also helps them to add value in the different areas. It also enhances the overall experience for the employees in this regard which would ultimately lead to a positive image for the HR function as a whole.

3. The inputs for the third objective indicate that HR employees are clear on the scope that AI can tackle the issues within the organization by demonstrating on a high level how the value addition can be derived.

6.1. Conclusion

There is no doubt that artificial intelligence is expanding across the different industries and sectors and changing the business dynamics through its impact on the functions with varying degree. Shell Oman Marketing Company is no exception to that. There are numerous empirical studies and this research included wherein the benefits of artificial intelligence are clear. The tasks in Human resource are predictive in nature which means AI truly does have a significant scope that can shape the future of work.

6.2. Recommendations

The implementation of AI in the organization would largely depend on how effective and accurate the machine learning would be in the process. For AI to be successful to the degree that is envisaged and deliver all the gains machine learning plays a central role. For this purpose, it is important that organization addresses and overcome the following five core challenges.

6.3. Future Research

With the study undertaken in both desktop mode and field visits the following areas could be considered for future research.

1. Developing a mathematical/financial model that could illustrate the cost savings and other forms of tangible financial benefits that the company would realize in the medium and long term.

2. Developing a comprehensive perquisite form for the implementation of AI in the company.

3. Exploring how AI could expand to rest of the functions in Shell Oman Marketing Company.

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