A Study of Innovation Factors Affecting Organisational Performance

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Abstract

This study aimed to develop a multi-linear regression model to explore the impact of innovation factors on the organizational performance of ADNOC. It employed a quantitative research approach in collecting and analysing the numerical data statistically. Correlation results found that there are significant positive relationships between all constructs, indicating that as one variable increases, the other tends to increase as well in the interconnections among marketing, management, process, organization structure, and organizational performance within the studied context. While, for the multi-linear regression model, it was found that the correlation coefficient of 0.503 between the predictors and the dependent variable, indicating a strong relationship. Furthermore, with the coefficient of determination, it suggests that 50.3% of the selected independent variables collectively explain the variance in the dependent variable. This equation model can be directly applied to ADNOC's organizational performance by inputting the values of the innovation factors/variables into the equation. The established equation holds potential benefits for organizations aiming to enhance performance through the application of innovative strategies.

1. Introduction

Since the early 2000s, the UAE government has implemented new public management measures (Alsaqri, 2018). The term "new public management" refers to approaches to managing public organizations that were established in the 1980s to bring managerial skills from the private sector into the public sector (Elbanna & Abdel-Maksoud, 2020). New public management emphasizes key characteristics of innovation such as resource efficiency, private-sector management methods, performance assessment, and contract-based compensation. The UAE government has introduced new managerial techniques in its public organizations as part of public management reforms. Particularly, it has increased the utilization of strategic performance assessment systems across public organizations in its effort to reform public management. Additionally, it has instituted governmental excellence awards to evaluate the work of its government agencies (Alsaqri, 2018). The UAE government encourages public organizations to compete for such awards annually, placing pressure on competing public organizations to meet award assessment requirements. Nonetheless, research on the factors that drive organizational performance in the UAE's oil sector is relatively scarce and provides limited insight into innovation within these businesses.

The United Arab Emirates (UAE) stands among the top ten global oil producers and actively engages with the UNDP (United Nations Development Program) (EIA, 2017). Despite the government's inclination towards fostering innovation and technology adoption, significant technological and financial risks pose substantial systemic barriers to the swift advancement of new technologies within the oil and petroleum industry in the United Arab Emirates (ENR, 2019). This dynamic significantly impacts organizational performance, hindering the

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organization's ability to keep pace with market trends favouring innovative AI solutions. Considering the benefits of novel AI technologies, the UAE government continues to place a high focus on developing public organizations with new innovations, especially state-of-the-art technologies. Organizational performance is measured by enhancing numerous capabilities that assist firms in addressing critical organizational innovation traits to obtain a competitive edge and provide superior services (Van de Weerd et al., 2016). However, in an era of ongoing transition, organizational work processes are regularly reinvented to survive in a dynamic environment driven by technological innovation and AI advancement (Ryan & Ali, 2013). This necessitates ongoing research by scholars to identify the variables of innovation that can affect organizational performance, particularly concerning AI innovation technologies. One of the key objectives of this research is to examine the structural relationship between the three constructs of innovation factors, organizational performance, and AI technologies. Put another way, the ever-changing landscape of innovation and AI technologies requires continuous research on the impact and relationship of these two aspects on organizational performance.

To enhance organizational performance, the UAE government would need to proactively address the challenges posed by innovation stemming from technological advancements, thereby ensuring proper training for its employees. Kolbjrnsrud et al. (2016) highlighted how innovations, particularly those related to technology and AI, are reshaping organizational work processes. In today's world, technological advancements have become a critical factor in enhancing organizational effectiveness (Rajapathirana & Hui, 2018). However, such arguments require empirical studies, which is the primary aim of this research, especially considering the UAE government's encouragement for public organizations to adopt the latest innovations and AI technology to improve their services and performance. Consequently, the current study needs to examine organizational innovation characteristics and their impact on organizational performance, with AI serving as a mediating variable.

Few studies have utilized data from the understudied UAE public sector to address the issue of creative resources/capabilities impacting organizational performance in the UAE, as highlighted by Elbanna and Abdel-Maksoud (2020). Endeavors to explore this topic could enhance our comprehension of the factors influencing organizational success across diverse contexts. Organizational performance remains a central theme in innovative management, garnering both empirical and theoretical attention across various regions worldwide.

To sum up, while the UAE has placed greater emphasis on innovation within public organizations, there has been limited research conducted in this area. ADNOC, one of the world's largest oil companies, is still under investigation regarding its utilization of innovation to enhance performance. Additionally, the past few years have witnessed significant advancements in organizational innovation, particularly in the adoption of technologies. The ongoing evolution of innovation necessitates continuous investigation into its impact on organizational performance, which is the primary focus of this research. Although innovation has been examined by various scholars, there is a need for a conceptual model tailored to the UAE context. This research's novelty lies in identifying the dimensions of innovation factors that influence organizational performance, which have not been integrated in previous studies. Furthermore, employing AI as a mediator aligns with the research's objectives, particularly as the UAE government is actively promoting the use of AI technologies to enhance public sectors. This positions AI as a crucial factor in strengthening the relationship between innovation dimensions and organizational performance. Finally, there is limited understanding of innovation within large oil organizations like ADNOC in the UAE, a gap this research aims to address through empirical investigation.

2. Literature Review

2.1 Innovation Factors

The innovation factors are clustered into three groups namely marketing innovation; Management Innovation; and Process Innovation.

2.1.1 Marketing Innovation Factors

Marketing and innovation are interconnected concepts, each relying on the success of the other for optimal outcomes. Marketing innovation, specifically, integrates marketing activities into the innovation process, playing a pivotal role in ensuring and enhancing innovation success (Drucker, 2015). All actions in innovation management that contribute to the market success of new products and services fall under the umbrella of marketing innovation. It involves effectively marketing new products or services to meet customer demands, anticipate future needs, and identify emerging market opportunities.

Marketing innovation, through strategic market mix and selection, focuses on addressing customer demands and preferences, resulting in significant enhancements across product, price, promotion, and distribution strategies (Ganzer et al., 2017). As Yusheng & Ibrahim (2019) note, marketing innovation encompasses differentiation in product, promotion, distribution, market, and pricing strategies. Consequently, marketing innovation entails the implementation of new strategies that lead to substantial changes in product development, packaging, promotion strategies, market positioning, and pricing.

According to the Organisation for Economic Co-Operation and Development (2005), the objective of marketing innovation is to fulfil customer needs by creating new markets and repositioning products to increase sales. Hence, regular implementation of marketing innovation is essential for organizations to compete effectively and efficiently (Wu et al., 2023). By embracing new ideas, products, and services within their marketing endeavours, banks can achieve growth and profitability. List of market innovation factors are as in table 1

Table 1 *Marketing innovation factors*

Code	Factors
MAR1	Utilizes innovative ideas for marketing
MAR2	Innovative ideas to meet customer needs
MAR3	Innovative services to meet market demands
MAR4	Explores future marketing opportunities
MAR5	Employs up-to-date tools to market its products and services
MAR6	Repositions its products in new markets to enhance sales

2.2 Management Innovation Factors

The second group pertains to management innovation, which involves an organization's management fostering innovation by empowering employees, as those with greater control over their job tend to exhibit more innovative tendencies (Ollila & Yström, 2020). However, experts suggest that the level of management support and empowerment directly impacts individuals' ability to innovate (Grass et al., 2020), emphasizing the importance of employees not feeling isolated in their pursuit of innovation.

While employees play a crucial role in formulating and developing innovative ideas, literature suggests that they require adequate time, materials, and financial resources for new and innovative ideas to flourish (Lei et al., 2020). Therefore, it falls upon management to ensure that the organizational environment fosters innovation and that employees are equipped with the knowledge of how to innovate in their roles.

Table 2 *Management innovation factors*

Code	Factors
MAN1	Fosters innovation among individuals in their work
MAN2	Nurtures innovative ideas
MAN3	Cultivates employees' new ideas to align with organizational goals
MAN4	Empowers employees to exercise creativity in their job duties
MAN5	Provides the necessary resources for innovation in work

2.2.1 Process Innovation Factors

Process innovation involves the introduction of new or enhanced tools, equipment, materials, and technologies that directly impact the goods produced by innovators, subsequently offered in the market. While product and process innovations differ, Möldner et al. (2020) define process innovation as something novel developed by a company to meet customer needs.

Process innovation encompasses the creation of entirely new or improved manufacturing or production processes, aiming to achieve greater output with fewer inputs. Sjödin et al. (2020) characterize this as eco-efficiency on a broader scale. It involves introducing new or significantly improved production processes and distribution methods for the end product, a concept gaining traction in recent years (Rogers et al., 2006).

Within the spectrum of transformation lies various types of process innovation, ranging from incremental to radical. Given its incorporation of equipment, methods, or software, process innovation holds significant importance. Its objectives include cost reduction, value enhancement, and product quality improvement (Tidd & Bessant, 2020).

Process innovation has the potential to be highly strategic, allowing companies to create unique offerings or showcase their business in a superior manner compared to competitors. Its application can provide a valuable competitive edge (Trantopoulos et al., 2017).

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Table 3 *Process innovation factors*

Code	Factors
PRO1	Provides innovative tools for processing its products
PRO2	Encourages the use of innovative ideas to meet customer demands
PRO3	Supports the use of innovation to reduce materials in manufacturing products
PRO4	Supports the use of innovation in product distribution
PRO5	Promotes the use of innovative technologies to streamline processing of customer needs

2.2.2 Innovative Organization Structure Factors

The innovative organizational structure, as the fourth component, encompasses various crucial factors that play a pivotal role in fostering employee innovation within the workplace, consequently enhancing organizational performance. One significant aspect is the formation of cohesive work teams within the organizational structure. These teams serve as hubs for collaboration and idea generation among employees, facilitating the exchange of innovative ideas and solutions (Grynko et al., 2020). Additionally, the degree of formality within the organizational setup influences communication channels, decision-making processes, and the ease of implementing innovative ideas. A more flexible and informal structure often fosters a conducive environment for innovation (Grynko et al., 2020). Implementing a flattened organizational hierarchy is essential in promoting open communication, faster decision-making, and greater autonomy among employees. By minimizing layers of management, organizations empower employees to take initiative and contribute to innovative endeavours (Waruwu et al., 2020). Encouraging collaboration across different departments or functional areas within the organization is another critical factor in fostering innovation. By leveraging diverse perspectives and expertise, organizations can enhance their capacity for innovation and problem-solving (Klaic et al., 2020). Lastly, the ability of the organization to adapt and redefine its boundaries is crucial for fostering innovation. Flexible boundaries enable the fluid exchange of ideas, resources, and collaboration with external partners or stakeholders, enriching the innovation ecosystem within the organization (Grynko et al., 2020). In essence, a combination of these factors contributes to creating an innovative organizational structure that empowers employees, promotes collaboration, and drives continuous innovation, ultimately leading to improved organizational performance.

Table 4 *Innovative Organization Structure*

Code	Factors
ORS1	Formation of cohesive work teams
ORS2	Create degree of formality within the organizational setup
ORS3	A flattened organizational hierarchy that promotes openness
ORS4	Encouraging collaboration across different departments or functional areas
ORS5	Ability of the organization to adapt and redefine its boundaries

2.3 Organizational Performance Factors

There exist several definitions of organizational innovation, each highlighting different aspects of innovation, ranging from processes to products, services, and organizational characteristics. The diversity in definitions underscores the need for an integrated understanding of innovation. For instance, Nandal et al. (2020) define innovation as the development, acceptance, and implementation of new ideas, processes, goods, or services. Similarly, West and Anderson (1996), as cited by Wong et al. (2009), describe innovation as the effective application of novel processes and products to benefit the business and its stakeholders. Hogan and Coote (2014) offer a broader perspective, viewing innovation as a multi-stage concept involving innovation as a process, a discrete item (e.g., products or services), and a characteristic of organizations.

The term "innovation" has gained widespread usage in both the public and private sectors, with Anwar et al. (2020) framing innovation as a multifaceted process involving individuals across the supply chain, communication networks, rules, and cognition. Encouraging creativity within organizations requires consideration of various factors, including the propensity for innovation, barriers to innovation, and available resources (Zhang et al., 2020).

Empirical evidence suggests that fostering innovation within organizations contributes to productivity, strategic process performance, organizational success, knowledge management, and financial performance (Saunila, 2020). Consequently, it is reasonable to assert that in order for businesses to thrive in the twenty-first

century, they must adopt strategies that foster continuous organizational innovation to gain a competitive edge in the market.

In the quest for eco-friendly solutions, various forms of innovation, such as "green innovation," "environmental innovation," and "sustainable innovation," are commonly explored (Halila & Rundquist, 2011; Becker & Egger, 2013). Enhancing and advancing environmentally friendly processes, products, organizational models, and systems can contribute to the environmental well-being of future generations (Halila & Rundquist, 2011). Environmental innovation encompasses initiatives that introduce new products, services, or processes for long-term development (Doran & Ryan, 2014).

When organizations employ innovation to adapt to new market demands or challenges, or to address environmental concerns, they are said to be innovating. However, until recently, many managers and economists viewed achieving more with less as simply the cost of doing business (Doran & Ryan, 2014).

Today's environmental challenges have heightened the imperative for innovation to reduce overall environmental impact (Rennings & Zwick, 2002). Developing a robust innovation program and integrating it into regular management operations is a demanding task, requiring a deep understanding of sustainability (Halila & Rundquist, 2011). Various types of innovation, such as process innovation, marketing innovation, management innovation, and product innovation, warrant attention from firms. Implementing new ideas without evaluating their impact on organizational performance is only marginally successful (Cheng, Yang, & Sheu, 2014).

Table 5 *Organizational Performance factors*

Code	Organizational Performance
ORG1	enhanced the efficiency of our service delivery
ORG2	contributes to effective service delivery
ORG3	high-quality service achievement
ORG4	focus on service improvement
ORG5	customer needs-centric approach

3. Data Collection And Analysis

This study adopted quantitative approach research involves the collection and analysis of numerical data to investigate relationships, patterns, and trends within a research topic. The empirical data were derived from a questionnaire survey among 129 employees of ADNOC, distributed using a convenient random sampling method. The respondents were required to rate each of the items in the questionnaire using 5-points Likert scale on the level of agreeability.

3.1 Cronbach's Alpha Reliability Test

Cronbach's alpha serves as a robust method for evaluating the reliability of a measurement instrument by scrutinizing the extent of shared variance, or covariance, among its constituent items in relation to the overall variance. The underlying principle posits that a reliable instrument will exhibit a substantial level of covariance among its items compared to the total variance. In essence, Cronbach's alpha offers insights into the consistency and stability of the instrument's measurements, providing researchers with confidence in the reliability of their data.

Cronbach's alpha values range from 0 to 1, where a higher value indicates greater internal consistency among the items. Typically, a Cronbach's alpha of 0.7 or higher is considered acceptable for research purposes, suggesting that the items within the instrument are reliably measuring the same underlying construct. Values approaching 1 indicate very high internal consistency, indicating minimal measurement error and strong reliability. On the other hand, values below 0.7 may suggest inadequate reliability, indicating that further refinement of the instrument or reconsideration of its items may be necessary to improve its consistency. Therefore, researchers can rely on Cronbach's alpha as a valuable tool to ascertain the trustworthiness and dependability of their measurement instruments, enhancing the credibility of their research findings (Tavakol, M., & Dennick, R, 2011; Taherdoost, 2016). Result of the reliability test for this study is as in table 5

Table 5 *Reliability test result*

Code	Organizational Performance	No. of factors	Cronbach Alpha
MAR	Marketing innovation factors	6	0.896
MAN	Management innovation factors	5	0.849
PRO	Process innovation factors	5	0.814

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ORS	Innovative organization structure factors	5	0.845	
ORG	Organizational performance	6	0.867	

Table 5 provides the reliability statistics for a series of items, using Cronbach's Alpha as a metric for internal consistency. This table furnishes two key pieces of information. Firstly, Cronbach's Alpha values range between 0 and 1, with higher values signifying superior internal consistency. In this instance, the computed Cronbach's Alpha falls within the range of 0.814 to 0.896, a notably high value nearing 1. This suggests a substantial correlation among the scale's items, indicating a strong level of internal consistency.

3.2 Normality Test

The skewness and kurtosis normality test is a statistical method utilized to assess the distributional properties of a dataset, particularly focusing on its symmetry and shape. Skewness measures the degree of asymmetry in the distribution, with positive values indicating a right-skewed distribution and negative values indicating a left-skewed distribution. On the other hand, kurtosis quantifies the tailedness or peakedness of the distribution, with positive values suggesting heavier tails or more extreme outliers compared to a normal distribution, and negative values indicating lighter tails. In this test, researchers typically calculate skewness and kurtosis statistics for the dataset and compare them to expected values under a normal distribution. While there is no universally accepted range for skewness and kurtosis, values close to zero (around -2 to +2) are often considered indicative of approximately normal distributions (Ghasemi, A., & Zahediasl, S, 2012).

The collected data was analysed for its normality, mean score and standard deviation as in table 6.

Table 6 *Result of normality tests*

No.	Items' Description	Skewness	Kurtosis
	Marketing Innovation		
MAR1	Do you agree that your organization utilizes innovative ideas for marketing?	-0.189	-0.189
MAR2	Do you agree that your organization has developed innovative ideas to meet customer needs?	-0.39	-0.111
MAR3	Do you agree that your organization consistently provides innovative services to meet market demands?	-0.35	-0.454
MAR4	Do you agree that your organization explores future marketing opportunities?	-0.263	-0.177
MAR5	Do you agree that your organization employs up-to-date tools to market its products and services?	-0.635	-0.333
MAR6	Do you agree that your organization repositions its products in new markets to enhance sales?	-0.234	-0.409
	Management Skills		
MAN1	Do you agree that your organization fosters innovation among individuals in their work?	0.171	-0.624
MAN2	Do you agree that your organization nurtures innovative ideas?	-0.221	-0.211
MAN3	Do you agree that your organization cultivates employees' new ideas to align with organizational goals?	0.202	0.111
MAN4	Do you agree that your organization empowers employees to exercise creativity in their job duties?	-0.324	-0.193
MAN5	Do you agree that your organization provides the necessary resources for innovation in work?	0.068	-0.036
	Process Innovation		
PRO1	Do you agree that your organization provides innovative tools for processing its products?	-0.168	-1.013
PRO2	Do you agree that your organization encourages the use of innovative ideas to meet customer demands?	0.102	-0.88
PRO3	Do you agree that your organization supports the use of innovation to reduce materials in manufacturing products?	-0.313	-0.326
PRO4	Do you agree that your organization supports the use of innovation in product distribution?	-0.098	-0.485

PRO5	Do you agree that your organization promotes the use of innovative technologies to streamline processing of customer needs?	-0.19	-0.544
Innovative Organization Structure			
ORS1	Do you agree the formation of cohesive work teams?	0.508	-0.801
ORS2	Do you agree the creation of formality within the organizational setup?	-0.275	-0.294
ORS3	Do you agree the flattening of organizational hierarchy that promotes openness?		
ORS4	Do you agree the encouragement collaboration across different departments or functional areas?		
ORS5	Do you agree the ability of the organization to adapt and redefine its boundaries?	0.206	-0.583
Organizational Performance			
ORG1	Do you agree that innovation has significantly enhanced the efficiency of our service delivery?	0.846	-0.787
ORG2	Do you believe that innovation contributes to effective service delivery?	0.188	-0.818
ORG3	Do you agree that innovation has resulted in high-quality service achievement?	-0.16	-0.288
ORG4	Do you agree that innovation has provided a focus on service improvement?	0.593	-0.194
ORG5	Do you agree that innovation has contributed to a customer needs-centric approach?	0.773	0.023

However, according to George and Mallery (2021), it is imperative to ensure the normality and suitability of data for analysis by examining the skewness and kurtosis values of the measurement items, which should ideally fall within the range of -3 to +3. The results of all variables, as presented in Table 6, lie within the acceptable range of -3 to +3, indicating that the dataset has a normal distribution and is suitable for subsequent analysis

3.3 Evaluation Analysis

The structured questionnaire designed for this study required respondents to assess each factor using a 5-point Likert scale, ranging from "strongly disagree" as 1 to "strongly agree" as 5. To compute the mean score for each factor, the responses were evaluated according to the criteria outlined in Table 7. Meanwhile, factor ranking was determined by comparing the mean scores of each factor with those of other factors. In cases where two or more factors obtained identical mean scores, priority was given to the factor with the smaller standard deviation value, thus elevating its rank above others.

Table 7 *Survey evaluation criteria*

Likert Scale		Evaluation scale	
5-points scale	Description of the scale	Interval scale	Inference of the scale
1	Strongly disagree	1.00-1.80	Very low
2	Disagree	1.81-2.60	Low
3	Neither	2.61-3.40	Moderate
4	Agree	3.41-4.20	High
5	Strongly agree	4.21-5.00	Very high

3.3.1 Evaluation of Marketing Innovation Factors

There are 6 marketing innovation factors, the evaluation and ranking of these factors are as in table 8.

Table 8 *Result of marketing innovation factors*

Factors	Mean score	Std. Deviation	Evaluation remark	Ranking
MAR.1	3.91	0.299	High	6
MAR.2	4.66	0.355	Very High	4
MAR.3	4.83	0.386	Very High	1
MAR.4	4.12	0.415	High	5

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MAR.5	4.72	0.419	Very High	3
MAR.6	4.81	0.410	Very High	2
Average	4.51	0.381	Very High	

Based on table 8, out of the six factors assessed, four garnered a significantly high level of agreement from the respondents, while the remaining two attained a comparatively lower but still notable level of agreement. This collective response led to an overall very high status when averaging the ratings of all six factors. In terms of individual rankings, the factor "Innovative services to meet market demands" (MAR3) received the highest rating, indicating strong agreement among respondents regarding its importance. Conversely, "Utilizes innovative ideas for marketing" (MAR1) obtained the lowest rating among the factors evaluated.

3.3.2 Evaluation of Management Innovation Factors

Table 9 *Result of management innovation factors*

Factors	Mean score	Std. Deviation	Evaluation remark	Ranking
MAN1	4.27	0.369	Very High	4
MAN2	4.34	0.390	Very High	3
MAN3	3.85	0.390	High	5
MAN4	4.80	0.428	Very High	2
MAN5	4.81	0.440	Very High	1
Average	**4.41**	**0.403**	High	

Referring to table 9, out of the six factors assessed, four garnered a significantly high level of agreement from the respondents, while the remaining two attained a comparatively lower but still notable level of agreement. This collective response led to an overall very high status when averaging the ratings of all six factors. In terms of individual rankings, the factor "*Innovative services to meet market demands*" (MAR3) received the highest rating, indicating strong agreement among respondents regarding its importance. Conversely, "*Utilizes innovative ideas for marketing*" (MAR1) obtained the lowest rating among the factors evaluated.

Table 10 *Result of process innovation factors*

Factors	Mean score	Std. Deviation	Evaluation remark	Ranking
PRO1	3.88	0.341	High	5
PRO2	4.54	0.388	Very High	4
PRO3	4.63	0.398	Very High	3
PRO4	4.71	0.408	Very High	2
PRO5	4.81	0.406	Very High	1
Average	**4.51**	**0.388**		

Table 10 indicates the varying levels of performance among the factors assessed. PRO1 achieved a mean score of 3.88, leading to a "High" evaluation remark and positioning it as the fifth-ranked factor among the set. Following closely, PRO2 obtained a mean score of 4.54, resulting in a "Very High" evaluation remark and positioning it as the fourth-ranked factor. Similarly, PRO3 garnered a mean score of 4.63, also earning a "Very High" evaluation remark and placing it third among the factors. Moving up the ranks, PRO4 obtained a mean score of 4.71, securing a "Very High" evaluation remark and ranking second. Notably, PRO5 [*Promotes the use of innovative technologies to streamline processing of customer needs*] received the highest mean score of 4.81, leading to a "Very High" evaluation remark and securing the top rank among the factors evaluated. Collectively, the average mean score across all factors stands at 4.51, reflecting a generally high level of performance across the board. However, PRO5 emerges as the standout performer, followed by PRO4, PRO3, PRO2, and finally PRO1, which ranks fifth. These findings offer valuable insights into the relative strengths and weaknesses of each factor, providing a basis for strategic decision-making and potential areas for improvement or further investigation

Table 11 *Result of organisation structure factors*

Factors	Mean score	Std. Deviation	Evaluation remark	Ranking
ORS1	3.87	0.349	High	5
ORS2	4.73	0.388	Very High	2
ORS3	4.53	0.388	Very High	3
ORS4	4.81	0.402	Very High	1
ORS5	4.44	0.377	Very High	4

Average	**4.48**	**0.381**	Very High	

Table 11 presents an evaluation of several factors in organisation structure domain denoted as ORS1 through ORS5, each assessed based on their mean scores, standard deviations, evaluation remarks, and rankings. It was found that ORS1 attained a mean score of 3.87, resulting in a "High" evaluation remark and positioning it as the fifth-ranked factor among the set. Conversely, ORS2 achieved a notably higher mean score of 4.73, earning a "Very High" evaluation remark and securing the second rank among the factors evaluated. Similarly, ORS3 garnered a mean score of 4.53, also meriting a "Very High" evaluation remark and ranking third. ORS4 stood out with the highest mean score of 4.81, earning it a "Very High" evaluation remark and placing it as the top-ranked factor. Meanwhile, ORS5 obtained a mean score of 4.44, resulting in a "Very High" evaluation remark and ranking fourth among the factors.

Furthermore, the table provides additional metrics to characterize the overall performance and consistency across all factors. The average mean score across all factors is calculated to be 4.48, indicating a generally high level of performance within the evaluated context. Additionally, the average standard deviation, standing at 0.381, reflects the consistency or variability of scores around the mean across the factors.

Table 12 *Result of organisational performance factors*

Factors	Mean score	Std. Deviation	Evaluation remark	Ranking
ORG1	3.89	0.337	High	5
ORG2	4.64	0.396	Very High	1
ORG3	4.11	0.396	High	4
ORG4	4.12	0.416	High	3
ORG5	4.63	0.386	Very High	2
Average	**4.28**	**0.386**	Very High	

Table 11 presents an evaluation of several factors in organisational performance domain labelled as ORG1 through ORG5. It was found that ORG1 achieved a mean score of 3.89, resulting in a "High" evaluation remark and positioning it as the fifth-ranked factor among the set. ORG2 obtained the highest mean score of 4.64, earning a "Very High" evaluation remark and securing the top rank among the factors evaluated. Following closely, ORG5 achieved a mean score of 4.63, earning a "Very High" evaluation remark and ranking second among the factors. ORG4 obtained a mean score of 4.12, also resulting in a "High" evaluation remark and ranking third, while ORG3 garnered a mean score of 4.11, resulting in a "High" evaluation remark and ranking fourth.

Additionally, the table provides the average mean score across all factors, calculated to be 4.28, and the average standard deviation, standing at 0.386. These averages further characterize the overall performance level and consistency across the factors evaluated, both of which are categorized as "Very High.

3.3.3 Correlation Between Constructs

Conducting correlations between constructs is crucial for understanding relationships. By examining correlations, it can uncover associations between variables, providing insight into how changes in one variable might affect another. This allows researchers to make informed predictions and understand the complex interplay within a system, ultimately advancing scientific understanding and facilitating more accurate modelling and decision-making processes (Schulz-DuBois, E. O., & Rehberg, I., 1981). Table 13 shows result of correlation between the constructs used in this study.

Table 13 *Bivariate Correlations*

		Marketing	Management	Process	Organization Structure	Organisational Performance
Marketing	Pearson Correlation	1	.504**	.556**	.386**	.442**
	Sig. (2-tailed)		0	0	0	0
Management	Pearson Correlation	.504**	1	.453**	.495**	.478**
	Sig. (2-tailed)	0		0	0	0
Process	Pearson Correlation	.556**	.453**	1	.474**	.460**
	Sig. (2-tailed)	0	0		0	0

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Organization Structure	Pearson Correlation	.386**	.495**	.474**	1	.671**
	Sig. (2-tailed)	0	0	0		0
Organisational Performance	Pearson Correlation	.442**	.478**	.460**	.671**	1
	Sig. (2-tailed)	0	0	0	0	

Table 13 provides valuable insights into the relationships between different constructs within the studied context. Each cell in the table represents the Pearson correlation coefficient, ranging from -1 to 1, indicating the strength and direction of the relationship between two variables.

Firstly, Marketing exhibits moderate to strong positive correlations with Management (0.504**), Process (0.556**), Organization Structure (0.386**), and Organisational Performance (0.442**). This suggests that as marketing efforts increase, there tends to be a corresponding increase in management effectiveness, process efficiency, organizational structure coherence, and overall organizational performance.

Similarly, Management demonstrates similar correlations with Marketing (0.504**), Process (0.453**), Organization Structure (0.495**), and Organisational Performance (0.478**). This implies that effective management practices are positively associated with marketing strategies, efficient processes, well-defined organizational structures, and improved organizational performance.

Process also shows moderate to strong positive correlations with Marketing (0.556**), Management (0.453**), Organization Structure (0.474**), and Organisational Performance (0.460**). This indicates that streamlined processes align with successful marketing initiatives, efficient management, coherent organization structures, and enhanced organizational performance.

Moreover, Organization Structure exhibits moderate positive correlations with Marketing (0.386**), Management (0.495**), Process (0.474**), and a strong positive correlation with Organisational Performance (0.671**). This suggests that a well-defined organizational structure is associated with effective marketing strategies, competent management practices, streamlined processes, and ultimately, superior organizational performance.

Finally, Organisational Performance demonstrates moderate positive correlations with Marketing (0.442**), Management (0.478**), Process (0.460**), and a strong positive correlation with Organization Structure (0.671**). This underscores the importance of cohesive organizational structures in driving overall organizational success, while also highlighting the interconnectedness of marketing efforts, management practices, and operational processes in achieving high performance levels.

The results suggest that there are significant positive relationships between all constructs, indicating that as one variable increases, the other tends to increase as well. These findings provide valuable insights into the interconnections among marketing, management, process, organization structure, and organizational performance within the studied context.

4. **Multi Linear Regression Model**

The Multi Linear Regression Model, a statistical technique outlined by Kumari and Yadav (2018), serves to clarify the relationship between a dependent variable and two or more independent variables. Its core objective lies in identifying the most fitting linear equation that predicts the values of the dependent variable based on the values of the independent variables. This approach facilitates the assessment of both individual and combined effects of the predictors on the outcome. The outcomes of the multi linear regression analysis conducted for this study are detailed in Table 14.

Table 14 *Multi Linear Coefficients*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	.209	.264		2.492	.014
	Marketing	.183	.061	.136	2.990	.003
1	**Management**	.123	.049	.112	2.509	.013
	Process	.102	.054	.086	2.879	.004
	Organization Structure	.541	.045	.522	12.056	.000

a. Dependent Variable: **Organisational Performance**

From the result of linear regression analysis in table 14, the established equation is as follow;

Organisational Performance = 0.209 + 0.183 Marketing + 0.123 Management + 0.102 Process + 0.541 Organization Structure

This established equation can be applied to measure the Organisational Performance in an organisation by inserting the variables values of Marketing; Management; Process; and Organization Structure. Greater confidence in the significance of the corresponding predictor is shown by t-value with equal or greater than 1.984 and p-value with equal or less than 0.05 (Kumari& Yadav, 2018).

4.1 Model Fitness

The effectiveness of a model can be assessed using R^2, also known as the coefficient of determination, which measures how well the model explains the variance. R^2 signifies the combined impact of exogenous constructs on predicting or clarifying the variance of the endogenous construct within the structural model. A higher R^2 value indicates a superior quality of the model in terms of explaining variance, while a lower value suggests lower quality (Hair et al., 2014; Hair et al., 2011; Memon & Rahman, 2013; Wong, 2016). Although there are no universally defined benchmarks for an acceptable R^2 level, recommendations from researchers may vary across disciplines. As a general guideline, a value of 0.25 is considered weak, 0.50 is moderate, and 0.75 is substantial (Hair et al., 2014; Wong, 2016). However, Hair et al. (2014) argued that in the field of consumer behaviour, an R^2 value of 0.2 is considered high. The model's R^2 summary, generated from the multi linear regression analysis, provides crucial insights into the fitness or goodness-of-fit of the model, as presented in Table 15.

Table 15 *R Square of the model*

Model	R Square	Std. Error of the Estimate	Sig. F Change
1	.503	.285	.000

Table 15 displays the summary of a regression model, revealing a robust significant linear relationship with a correlation coefficient of R^2 = 0.503. The coefficient of determination, R Square, explains how effectively the chosen independent variables collectively explain the variation in the dependent variable. In this instance, the coefficient of determination accounts for approximately 50.3% of the variance in the dependent variable which is the organisational performance. The model comprises multiple predictors, including Marketing, Management, Process, and Organization Structure. The standard error of the estimate stands at around 28.5%, indicating a reasonably accurate prediction capability.

5. Conclusion

This study aimed to develop a multi-linear regression model to explore the impact of innovation factors on the organizational performance of ADNOC. Employing a quantitative research approach, the study involved collecting and analysing numerical data to examine relationships, patterns, and trends related to the research topic. Empirical data were gathered through a questionnaire survey administered to 129 ADNOC employees, selected using a convenient random sampling method. Respondents rated each questionnaire item using a 5-point Likert scale to gauge agreeability. Correlation results found that there are significant positive relationships between all constructs, indicating that as one variable increases, the other tends to increase as well in the interconnections among marketing, management, process, organization structure, and organizational performance within the studied context. While, for the multi-linear regression model, it was found that the correlation coefficient of 0.503 between the predictors and the dependent variable, indicating a strong relationship. Furthermore, with the coefficient of determination, it suggests that 50.3% of the selected independent variables collectively explain the variance in the dependent variable. This equation model can be directly applied to ADNOC's organizational performance by inputting the values of the innovation factors/variables into the equation. The established equation holds potential benefits for organizations aiming to enhance performance through the application of innovative strategies.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

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