Role of Organization Project Management Maturity Model (OPM3) in Leveraging Program and Project Management Practices

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A R T I C L E   I N F O

A B S T R A C T

Successful projects require appropriate tools and effective management practices. Managers need to have a clear insight into project goals and use outstanding skills to implement them accordingly. They also must maintain a balance between customer satisfaction levels and profit maximization goals. The Organizational Project Management Maturity Model (OPM3) is among the critical tools for generating standardized outcomes in organizational projects. This study analyzed the overall features of OPM3, its purposes, components, SWOT analysis and its key success factors. The researchers conducted an investigation among organizations that use the model in the UAE. They administered written questionnaires among the participants and analyzed both the qualitative and qualitative data using tables and charts. Based on the findings, the main purpose of the model is to incorporate critical portfolio management and programs into organizational projects. The tool allows project managers to standardize measure and control the outcomes effectively. The major success factor is the generation of optimized outcomes since the OPM3 model allows for the continuous identification of gaps and improvement of processes. The major challenges associated with OPM3 implementation was rigidity and lack of clear governance structures in most organizations. The researchers conclude that written policies and procedures in addition to excellent management skills can maximize the benefits of OPM3 models among the UAE organizations.

1. INTRODUCTION

The primary objective of any organization is to maximize returns from all investments. The managers look forward to running smooth operations up to the project maturity levels and achieve the anticipated outcomes within the speculated duration. The Organizational Project Management Maturity Model (OPM3) offers a suitable platform for generating standardized results and regulating critical tasks to align them with the pre-determined goals (Nikolaenko & Sidorov, 2023). The model serves the key purpose of enhancing accuracy since the continuous improvement of processes prevents repetitive errors. In addition to the promotion of efficiency, OPM3 facilitates the identification of project scope and risk analysis processes (Guangshe et al., 2008). OPM3 allows project managers to assess

organizational capabilities and determine suitable ways of bridging the existing efficiency gaps (Machado et al., 2021). It has five key levels that include the initial, structured, Organizational Standards and Institutional Processes, managed process as well as the optimized process respectively (Desai & Corporate, 2007). Project managers should adhere to all the steps such that their activities can align with the desired levels of customer satisfaction and profit maximization goals. An analysis of OPM3 usage among UAE firms indicated that the model pays a vital role in optimizing and standardizing project outcomes (Domingues & Ribeiro, 2023). A majority of the respondents pointed out that they have experienced positive changes in performance after adopting the project management model.

The key strengths associated with OPM3 usage among the firms include the ability to align operations with the four pillars of profit, people, efficiency and performance (Jaleel & Azhar K. Mansur, 2013). Most managers understand the significance of the model in optimizing the quality of project outcomes. Additionally, most of them have considerable knowledge and experience concerning the integration of the OPM3 model into project operations (H. M. Alzoubi, In'airat, et al., 2022; M. El Khatib et al., 2021). Some of the key opportunities for improvement include the integration of different project management facilities and the acquisition of certified OPM3 applications to optimize the qualities of output (M. Alshurideh, Almasaeid, El Khatib, et al., 2022; M. M. El Khatib & Ahmed, 2020). However, most of the firms experience challenges in attaining the desired results. The SWOT analysis outcomes indicate that most firms have rigid organizational structures and lack effective employee empowerment programs. Proper planning, talent development and precise OPM3 implementation policies can help the organizational managers in UAE to mitigate challenges while maximizing the benefits of the model.

1. LITERATURE REVIEW
1.1. OPM3
Managing projects goes beyond implementing the knowledge, skills, tools and techniques (Kent Crawford, 2006). The simple use of project management without control and standardization can result in repeated errors and failures among a portfolio of projects (R. S. Al-Maroof, Alhumaid, et al., 2021). Organizations usually go through slow and hard learning process in order to achieve success in managing projects (I. Akour et al., 2023; M. M. El Khatib et al., 2019). According to (Zahra Naseri et al., 2021) (M. Alzoubi et al., 2021; Mubeen et al., 2022), organizational maturity in project management can be defined as degree to which the organization practices the organizational management of projects (Alhamad et al., 2021; Farrukh et al., 2023). This can be described as, the more mature an organization is in project management based on standard, results better their performance in managing projects. While (Bento et al., 2019) explain the Maturity model as the means by which all projects in an organization are managed and executed in a regulated, disciplined, and systematic manner, using established best practices (I. Akour et al., 2022; M. El Khatib et al., 2021; M. T. Nuseir, Aljumah, & El-Refae, 2022). The degree or level of capability or expertise regarding project management is referred as "maturity". An organization is mature when it can deal perfectly with its projects (E. & S., 2021) (H. M. Alzoubi, Alshurideh, Kurdi, et al., 2022). So, project management maturity refers to organization's competency in managing projects and includes the amount to which it utilizes a methodology for project planning and control, multi-project integration, and continuous development.

1.2. The Purpose of OPM3
According to PMI, the purpose of this model is to incorporate the results of several researches on best practices in organizational processes of Portfolio Management, Programs and Projects and in processes of Project Management, Standardization, Measurement, Control and Continuous Improvement (Wijaksono et al., 2020). Moreover, James Pennypacker describes it as "the purpose of a project management maturity model is to provide a model of progressive improvement in project management systems and processes that can be used to assess an organization's capabilities and to provide an improvement path" (A. I. Aljumah et al., 2021a). Organizational Project Management Maturity Model helps organization to develop multiple project delivery systems of program management and align projects to strategic objectives the organizations are trying to

accomplish. Schlitter states that OPM3 provides guidance regarding how to following:

- Articulate project success
- Measure project performance
- Make the delivery of projects more predictable
- Help projects work together instead of against each other in a multi-project environment (A. I. Aljumah et al., 2021b; Ghazal, Al-Dmour, et al., 2023).

1.3. OPM3 Main Components and Levels

Organizational Project Management Maturity Model consists of two-dimensional model (El khatib, Beshwari, et al., 2023; Louzi, Alzoubi, El Khatib, et al., 2022) (A. Al-Kassem et al., 2013). The first model is the Capability Maturity Model based on the structure of the Software Engineering Institute. This model is widely accepted as a standard for assessment of organizational maturity in several process areas (Abudaqa et al., 2022; A. I. Aljumah, Shahroor, et al., 2022; Lee, Wong, et al., 2023). The second dimension consists of the nine PMI knowledge areas. Each of the knowledge areas are further decomposed into key elements that provide more specific determination of project management maturity. (Figure.1) shows the Project Management Maturity Model.
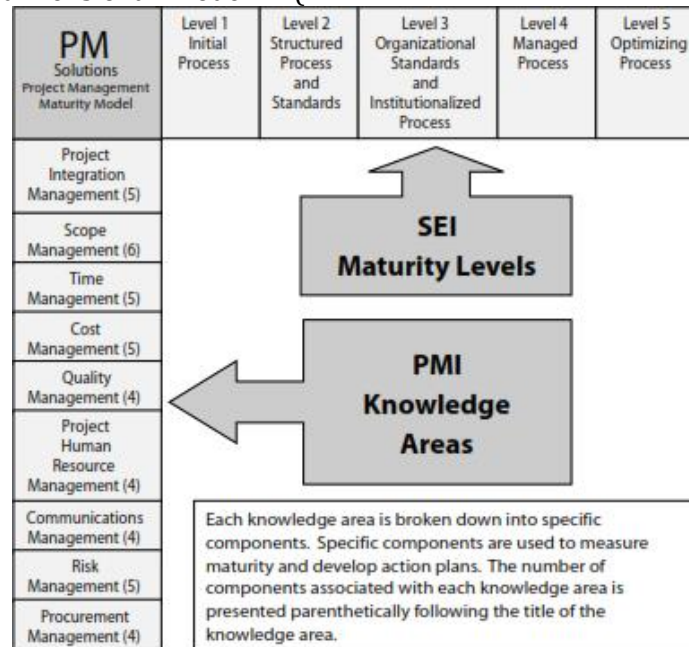
(Figure.1) Project Management Maturity Model (Pennypacker, 2002).

The Project Management Maturity Model can be broken down into five distinctive levels:

1. **Level 1 Initial Process:** Management understands the definition of a project, there are accepted processes, and is aware of the need for project management (Tariq, Alshurideh, Akour, & Al-Hawary, 2022).

2. **Level 2 Structured Processes and Standards:** Many project management processes exist in the organization, but they are not considered an organizational standard (Tariq, Alshurideh, Akour, Al-Hawary, et al., 2022). Management supports the implementation of project management, but there is no consistent understanding, involvement nor compliance for all projects. There are basic track of project cost, schedule and technical performance with manually collected data (H. Alzoubi et al., 2022; M. T. Nuseir, Aljumah, & El Refae, 2022a).

3. **Level 3 Organizational Standards and Institutional Processes:** All project management processes are established as organizational standards (Kassem & Martinez, 2022). Most projects use these processes and management has institutionalized the processes and standards with proper documentation existing on all processes and standards. Regular involvement of management input and approval of key decisions and documents in key project issues (A. Al-Maroof et al., 2021; A. I. Aljumah, Nuseir, et

al., 2022a; Ghazal, Hasan, Abdullah, et al., 2023). Project management processes are normally automated with each project is evaluated and managed with consideration of other projects (I. Akour et al., 2021; M. T. Nuseir et al., 2021).

4. **Level 4 Managed Process:** Projects are managed with consideration of the project performance in the past and expected future. Management uses metrics to make decisions regarding the project and understand the impacts on other projects (H. M. Alzoubi, Ahmed, et al., 2022; M. El Khatib, Khadim, et al., 2023; M. T. Nuseir, Aljumah, & El Refae, 2022b). Project information is incorporated with other corporate systems to optimized business decisions and processes and standards are documented to support the use of such metrics to make project decisions (A. H. Al-Kassem, 2017; M. M. El Khatib et al., 2023; Louzi, Alzoubi, Alshurideh, et al., 2022). Management recognizes it role in the project management process and executes it well, managing at the right level, and clearly differentiating management styles and project management requirements for different sizes or complexities of projects. Project management processes and standards are integrated with other corporate processes and systems (Alshawabkeh et al., 2021; Amiri et al., 2020; M. El Khatib et al., 2023).

5. **Level 5 Optimizing Processes:** Processes are in place and used to improve project management activities. Lessons learned are examined and used to improve project management processes, standards, and documentation (I. A. Akour et al., 2022; A. H. Al-Kassem et al., 2022). Management and the organization are focused on efficiently manage projects and continuous improvement. Data collected during execution are used to understand the performance of projects and making organizational management decision for the future (M. T. Alshurideh, Alzoubi, Ghazal, et al., 2022).

This standard seeks to improve organizations in an orderly manner in terms of project management, programs and portfolios by translating successful strategy into successful results in a coherent way that can be guessed through the three elements, Knowledge element, Assessment element, and Improvement element (Aityassine et al., 2022; H. Al-Kassem, 2014; Almasaeid et al., 2022).

- **Knowledge Element:**
Introduce the contents of OPM3 including an operational summary, a listing explanation to understand organizational project management, definition and application toward organizational management maturity, terms of OPM3 standard, OPM3 steps, OPM3's supplements, glossary, and signs (PMI OPM3, 2003)

- **Assessment Element:**
Endorses the organization to evaluate its current organizational project management and organizational project management maturity to be compared with OPM3 standard (Bawaneh et al., 2023; M. El Khatib, Ibrahim, et al., 2023).

- **Improvement element:**
After perfuming the assessment process, the organization can specify new set of capabilities, which supports the organization to model a basis of plans for future optimization (Nadzri et al., 2023). Also, it is effectively supporting organizations to increase their efficiency through these points:

1. Integrating knowledge of the OPM3 community through various companies and websites.
2. Recognition and formation of acceptable and tested OPM3 practices in general (M. T. Alshurideh, Alzoubi, Ghazal, et al., 2022; Ghazal, Hasan, Alzoubi, et al., 2023; Yasir et al., 2022).
3. Providing support to organizations to assess their current maturity and the necessary step to reach the highest level of maturity in the future.
4. A constraint on the evaluation of structured practices to OPM3 and the comparison of best practices.
5. Develop a guideline based on the results of the evaluation to guide organizations to further improvements.
6. Provide support in making organizational decisions to be fully prepared for any possible changes (M. T. Alshurideh, Alquqa, Alzoubi, Al Kurdi, & Alhamad, 2023).

1.4. Role of OPM3 in Improving Program

Management Especially in Government Sector

By understanding OPM maturity, the strategic objectives of the organization will be easily accessible by aligning the evolving project management and organizational requirements (A. Aljumah et al., 2020; M. El Khatib et al., 2022). In addition, once biased organization can evaluate future IT applications, PM, product knowledge, management skill sets, just as with any decision to support important business or other services (Ahmed & Nabeel Al Amiri, 2022). Since the main objective of any organization is to create a competitive advantage, it is important that organizations value business processes (Gulseven & Ahmed, 2022). PMI (2003) describes the role opm3 plays in this regard as follows: OPM3 is a standard placed under PMI. The purpose is to provide a way for organizations to understand OPM3 and to measure their maturity against a comprehensive and board-based set of best practices and management of organizational projects. OPM3 also helps organizations wishing to increase their maturity by managing organizational projects for planning and improvement (H. M. Alzoubi, Sahawneh, Alhamad, et al., 2022; M. El Khatib et al., 2020; M. T. Nuseir, 2020). (M-8) Although the OPM3 model is comprehensive, little research has been done to determine the role that knowledge management plays in organizational maturity. (R. S. Al-Maroof, Alnazzawi, et al., 2021; M. T. Alshurideh, Alzoubi, El khatib, et al., 2022; M. M. El Khatib & Ahmed, 2018), and many others have started this work, however, only (M. Alshurideh et al., 2023) created his images of knowledge sharing roles, transfer and managed knowledge capabilities Play in the company's project management process. His study suggests that he does not investigate the links between the management of knowledge organization maturity in project management organization maturity in project management; and thus, became the intent of this investigation (Elkhatib, M., Al Hosani, A., Al Hosani, I., & Albuflasa, 2022). Through the preparation of several interviews with government organization in the United Arab Emirates it became clear that the role and responsibilities of the program manager in OPM3 are:

1- Defining the scope of project
2- Planning the scope of project
3- Activity and resource planning for projects
4- Developing schedules and timescales for projects
5- Cost estimating of project
6- Budgeting for projects
7- Completing documentation
8- Risk analysis
9- Risk management
10- Progress monitoring
11- Team management
12- Scalability and portability analysis
13- Quality control
14- Conflict resolution
15- Coaching and mentoring
16- Greater agility
17- Greater capability to choose the right projects to enact business strategies
18- Greater capability to deliver projects successfully, consistently, and predictably
19- Increased benefit realization from programs
20- Increased freedom of action-taking
21- Increased agility
22- Better collaboration among organizational units
23- Reduced bureaucracy
24- Personnel aligned to the organization's policies and processes
25- Improved decision-making
26- Increased inter-operability among teams
27- Better performance data for executives
28- Increased productivity
29- Data-driven, proactive, quantifiable, confident execution

1.5. SWOT analysis, OPM3 role in program management, focus on components that interact to program management

This model is based on continuous approaches while other models have several separate levels and it Revert to the PMPOK (M. Alshurideh, Alzoubi, Alshurideh, et al., 2022). It can help the project to get improve and achieve successful results from change management processes, so that it focuses on implementing its strategy with high success and continuity as predicted by its standards (M. El Khatib, Khayat, et al., 2023; M. T. Nuseir & Aljumah, 2020). Promote the affair between organization strategy and projects preformed, provide projects projected and dependable, the organization can exceed the efficiency (Abudaqa et al., 2021; El khatib, Mahmood, et al., 2023). The organization implements projects and allocates resources

correctly and there is a clear understanding of the links between strategic vision and initiatives that support the vision, objectives and outcomes to be achieved through portfolios, programs, projects, and stakeholder interests that are in line with market requirements (AlDhaheri et al., 2023; M. El Khatib, Alzoubi, et al., 2023; Ghazal, Hasan, Ahmad, et al., 2023). Challenges in the OPM3 can be technical, domain management, the cost and reschedule, hardly in achieving the best practices in classical project areas, and improper to apply PM to general operational tasks were directed as the main challenges for WSRC to apply PM principle to enhance efficiency and meet strategic goals (A. Aljumah et al., 2023; Gaytan et al., 2023; E. Khatib et al., 2021). To resolve these challenges, the use of OPM3 methodology to support and analyse OPMM WSRC and apply PPP management principles (knowledge, skills, tools and techniques) and best practices to obtain results was assessed (R. S. Al-Maroof, Alahbabi, et al., 2022) (Al-Kassem et al., 2012; Aziz et al., 2023). However, there have been some constraints limiting the strength of this evaluation that have affected the scope such as the limited evaluation time, limited number of residents to conduct the assessment, and existing sources such as OPM3 Product Suite, which is under development in the evaluation (M. El Khatib et al., 2022; Lee, Nawanir, et al., 2023). Considering this, the process has gone through several stages (standardization, measurement, monitoring and improvement) and two areas of OPM3 (project management and software management) and avoided portfolio management (PMI OPM3, 2006).

1.6. Critical Success Factors for OPM3

This methodology applies four stages of development to the existing processes: Standardize Measure, Control, and Continuous Improvement (M. T. Alshurideh et al., 2023). Organizations must adopt a process-improvement approach in organizational project management (H. M. Alzoubi et al., 2019; Nuseira & Aljumahb, 2020). They must identify the gaps in maturity that reduce business performance then apply the suitable disciplines to achieve continuous improvement (H. M. Alzoubi, Ghazal, El khatib, et al., 2022; M. T. Nuseir & Aljumah, 2022). So, an assessment of the whole processes in the organization must be conducted to identify the gaps and weak points (H. M. Alzoubi et al., 2020;

Blooshi et al., 2023; M. Nuseir & Elrefae, 2022). The second step is to measure the maturity level of the organization in terms of project management. Then corrective measures must be considered to eliminate all the weak points and to fill the gaps in the organization's processes (Ahmed et al., 2022; R. S. Al-Maroof, Alnazzawi, et al., 2022). Top management must understand the value of project management and program management and align them with the corporate and business strategy (A. I. Aljumah, Nuseir, et al., 2022c; Khan et al., 2022). Continuous improvement programs shall be in place throughout the organization to accomplish the target maturity level (A. I. Aljumah, Nuseir, et al., 2022b; H. Alzoubi & Ahmed, 2019). Recent study by Strausser & Barney identified four key success factors for implementing and sustaining organizational project management maturity: 1) Executive support 2) Program management best practices 3) Process management infrastructure 4) Program management best practices (H. M. Alzoubi, Kurdi, Alshurideh, et al., 2022; M. El Khatib, Alnaqbi, et al., 2023).

1.7. Assessment and Gaps to Support Program Management

Studies shows that corporations around the world are losing billions in wasted project spending and the main reason is the lack of alignment between projects and corporate strategy (Amiri et al., 2020; M. T. Nuseir, 2021; Varma et al., 2023). Most organizations either have no, or only an unofficial benefits management process for associating and managing the value relationship between strategic value decisions, project value delivery, and operational value fulfilment (Al-Awamleh et al., 2022; Arshad et al., 2023; M. El Khatib, Zitar, et al., 2023). Many organizations do not practice on base-lining current business performance to gauge and measure improvement (H. M. Alzoubi, Alshurideh, Al Kurdi, et al., 2022). Inadequate benefits management processes prevent the formulation of program and project success and this creates a largely uncountable degree of benefits leakage (H. Alzoubi et al., 2020; M. El Khatib, Ahmed, et al., 2023; Hani Al-Kassem, 2021; Sakkthivel et al., 2022). After All, there is a language barrier between business management and project management and most project managers still unable to communicate project management in terms of business (Al-Dmour et al., 2023; Mat Som

& Kassem, 2013). Additionally, project managers lack the ability to relate business success measures at the project level and don't tie project management to business performance (M. T. Alshurideh, Alquqa, Alzoubi, Al Kurdi, & Hamadneh, 2023; H. M. Alzoubi, Kurdi, Akour, et al., 2022; M. El Khatib, Beshwari, et al., 2023). Lastly, organizations are unwilling to commit to long-term process performance improvement and lacking an organizational perspective to project management (M. T. Alshurideh et al., 2023; M. T. Nuseir et al., 2020).

1.8. Research Questions
The research questions for this report we will following:
1. The correlations between project program and portfolio and the OPM3.
2. The correlations between program and portfolio and strategies in the organizations.
3. The correlations between the level of the OPM3 and the program and portfolio characteristics in the organizations?

1.9. Research Objectives
- To highlight the effect of OPM3 at the organizations.
- Provision information of programs and portfolios at the companies and organizations in the UAE.
- Definition of programs and portfolios on the organization.
- We will evaluate the factors and tools that improve a programs and portfolios to ensure the achievement of strategic objectives at the organizations.

2. METHODOLOGY DESIGN
In this section we describe how the study was conducted and discussed the method of research used in this study, the samples, the procedures and the data collection tool. Therefore, the methodology is divided into three stages (The final draft of GanttChart can be found in APPENDIX):
Stage 1:
In the first stage, we collected historical information in the field of programs and portfolios from websites, magazines, conferences and other sources available to collect this information.
Stage 2:
In the second stage, first interview was conducted

with 13 people with experience in the field of programs and portfolios in different organizations, which includes an interview with Dr. Ahmed Altrawnah at RTA, the consultant of PMO; and others interviews that make it from others organization. The design of the study is a descriptive cross-sectional study and the sampling method is the non-probabilistic sampling type, which is the method of snowball sampling, where the persons interviewed were identified by the organization's personnel concerned with the programs and portfolios. Similar questions and two parts were used for each interview (part one seven questions each interview and part two: seventeen questions for each interview). These questions include the definition of programs and portfolios of the organizations, why Alignment with the strategy, what and why methodology is used, different aspects in the program like CSF (critical success factors), different aspects in the program like KDF (key deficiency factors), its relationship with programs, number and complexity of programs, in which industries and which areas, what program governance is challenging and other questions that depend on organization. Second interview made by contact with concerned by a telephone with three persons from different companies like RTA, TRA and ADNOC, that include 10 questions about Organization Project Management Maturity Model OPM3 that the Key strategic challenges for project and program management in government, how can OPM3 address these issues, Steps that the OPM3 can take to strengthen project and program management across the government and other questions for OPM3.
Stage 3:
For concluding the method which is by collecting as much data as possible on programs and portfolios and OPM3 of the Organization, we realized the need to make interview questions as clear as possible to the reader to answer them in order to obtain results and ensure reliability and validity. We conducted the interviews among the manager and experts in project management of the different organizations in UAE Dr. Munire designed close-ended questionnaires for our analysis it will be easy for us to present it in the form of graphs. The final draft of interviews can be referred in APPENDIX.

3. DATA COLLECTION
Collected Data (Based on All Interviews):
* 1 if available, 0 if not available
** 0 mean good, 1 means bad

Program aligned with storage – learner	*PMO existence	*Qualitative & Quantitative	*Criteria to measure progress	*Criteria to measure success	**Key Deficiency Defined
ADNOC - Jassem	0	None	Schedule. Quality. Cost. ... Stakeholder Satisfaction	1	0
Etisalat - Samya	1	Both	Schedule	1	1
RTA - Layla	0	None	Schedule + customer satisfaction	1	1
RTA – Asagirh	1	None	Schedule	1	1
DEWA- Abdulla	0	Both	Schedule	1	1
Ajman Digital Government – Afra	1	Qualitative	Schedule	1	1
ADNOC GAS - Ahmed	1	Both	Schedule	0	0
Dubai Municipality - Alia	0	None	Schedule	1	1
Dubai Municipality – Saeed Almarzooqi	1	Both	Schedule	1	0
DHA – Hessa	1	Both	Schedule	1	1
DHA – Ayesha	0	Both	Schedule + customer satisfaction	1	1
Emirates Group - Sumaya	1	Both	None	0	1
Emirates Global Aluminum - Sumaya	1	None	Customer satisfaction	1	0

Collected Data (Group Project Questionnaire):
In order to gain better understanding of how can OPM3 address the issues and steps that OPM3 can be taken to strength project and program management across the government, we interviewed three managers across RTA, ADNOC and Etisalat company thus to get their opinion towards the method of OPM3. Therefore following questions are the main focus in the interview:

1. What are key strategic challenges for project and program and management in your organization?
2. How can OPM3 address these issues?
3. What are the steps can be taken to

strengthen project and program management across the government?

4. How can OPM3 handle the issue of integrated approach to the development of organization wide program management policy and oversight of agency implementation and reason we need it in organization?

Initially, we conducted our first interview with Mr. Ahmed Altarawneh, who manages projects in RTA which he mentioned the main challenges for project and program management includes alignment to strategy, contribution to strategic direction and goals, buy-in, management of change, availability of trained and certified staff, data and information capture and analytics, proper project health and performance measurements, availability of resources on financial and otherwise also end user satisfaction and acceptance. And he advised that OPM3 can address these issues since OPM3 is methodological and can govern the implementation, deployment, performance, KSF, help align and standardize thus to allocate the whole organization on one page. Also the steps mentioned by Mr. Ahmed to strengthen the project and program management across the government by showing a clear steps and process with alignment across whole organization. And with integration approach to the development and well known policy and governance, OPM3 is a mature and can significantly payoff the result. The second interview completed by Shiva Pillai who works on key focal point for ONE-ERP projects in ADNOC and he mentioned the strategic challenges for project and program from ONE-ERP project perspective, standardization of business process and its measuring KPI's against each of the business process is a big challenge. Also, Mr. Shavia advised to address these issues from the KPI's which are measured on every 2 Qtr's so that continuous improvement is taking place. Moreover, the steps of OPM3 can be followed to strengthen project and

program management across the government can be as following few points: 1) greater agility, 2) greater capability to choose the right projects to enact business strategies, 4) greater capability to deliver projects successfully, consistently, and predictably, 5) increased benefit realization from programs. Also, Mr. Shavia mentioned the integration approach to the development of the organization wide program management policy and oversight of agency implementation are needed in OPM3 since its structured discovery of their organization portfolio, program and project management practices. The third interview done with Mr. Yasser A Zaki, he is Sr. director at corporate program management of Etisalat Company, mentioned challenges of strategic as allocating to budgeting and recourses/teams for strategy execution and need to stretch the communication for strategy. Moreover, in able OPM3 to address the issues through the improvement cycle, which it is much easy to handle OPM3 if there is written policies, procedures or documented information to support solving those challenges. And steps can be taken to strengthen project and program management across the government such as improving happens within certain tier that can improved by OPM3. Also, Mr. Yasser mentioned integration approach to the development and well known policy and oversight of the agency implementation issues can be handle by OPM3 since there is currently similar set of policies and procedures for project management execution which can support for governance, meetings for progress updates, sharing and communicating strategies to the staff management and to the Group of CEO on quarterly bases.

5. DATA ANALYSIS

5.1. Data Analysis (Based on All Interviews)

Following table demonstrate the list of elements availability and existence in different organization located in UAE allocated for program purpose:

Table 1:

Organization – Done by Learner	PMO	Quantitative Data	Qualitative Data	Criteria to measure progress	Criteria to measure success
ADNOC – Jassem				X	X

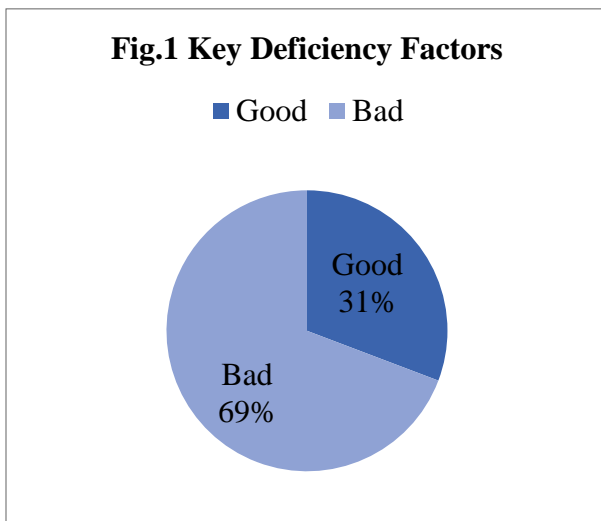| Organization					
Etisalat – Samya	X	X	X	X	X
RTA - Layla				X	X
RTA – Asagirh	X			X	X
DEWA- Abdulla		X	X	X	X
Ajman Digital Government - Afra	X		X	X	X
ADNOC GAS - Ahmed	X	X	X	X	
Dubai Municipality - Alia				X	X
Dubai Municipality – Saeed Almarzooqi	X	X	X	X	
DHA – Hessa	X	X	X		
DHA – Ayesha		X	X	X	X
Emirates Group - Sumaya	X	X	X		
Emirates Global Aluminum - Sumaya	X		X		X

Following table shows the list of criteria used in each organization to measure the progress, and most criteria used below is schedule which used as evidence that program is met on time or delayed for some reasons:

Table 2: the list of criteria used in each organization

Organization – Done by Learner	Schedule	Quality	Cost	Stakeholder Satisfaction	
ADNOC – Jassem	X	X	X	X	
Etisalat – Samya	X				
RTA - Layla	X			X	
RTA – Asagirh	X				
DEWA- Abdulla	X				
Ajman Digital Government	X				
ADNOC GAS	X				

Dubai Municipality – Alia	X	
Dubai Municipality – Saeed Almarzooqi	X	
DHA – Hessa	X	
DHA – Ayesha	X	
Emirates Group – Sumaya		
Emirates Global Aluminum – Sumaya		X

(Figure 1) pie chart indicates the percentages of good and bad key deficiency factors extracted from all organization which are listed above table:

Figure (1)

Fig.1 Key Deficiency Factors
■ Good ■ Bad

Good 31%
Bad 69%

SWOT Analysis Based on all interviews
Below SWOT analysis are selected for three organization supporting to define the internal factors of the organization which represented as (strength and weakness) also the external factors of the organization which are represented as (opportunities and threats) thus to support in program management:

1. ADNOC

STRENGTH	WEEKNESSES
• Organization is aligned with strategy of four pillars (People, Profit, Efficient and performance) • We'll defined organization structure for the program such as (Steering Committee, weekly meetings and programmed head for guidance on risks and issues) • Business units are clear with process and using ERP system for mature PMIS	• Un-availably of a clear scope • Un-clear list of users to be involved • Un-sufficient training's to employees • Un-effective organizational change management and business process engineering
OPPORTUNITIES	THREATS
• Each business have subject matter expert • Available criteria to measure the success	• Resisting to changes might cause over due to deliver latest solution and business to the market

2. Etisalat

STRENGTH	WEEKNESSES
• Required information are agreed from begging of program including qualitative and quantitative if any. • PMI method is followed to manage	• Large number of stakeholders involved compared to managing an individual project which is less involvement. • More accountable people leads to any

	changes affects another domain
• program	
• Etisalat managers have enough experience and knowledge on projects	• un-sufficient communication and updates received on time from project manager when one project is impacted
• Programs in Etisalat are archived by meeting constrains (Time, Cost and Recourses)	
• Programs are aligned with the organization strategy	
OPPORTUNITIES	**THREATS**
• Give program and project managers certain power of decision making	• Not much tools and techniques used to manage the program
• Agree on governance plan at begging of program	• Un-clear idea/ benefit of the program at each activity
• Program manager ability to apply best and suitable techniques to the existing process of managing program.	• Un-clear list of buy-in (support and sign-off) to be involved in every stage of the program
	• Un-sufficient communication through downward and upward
	• un-clear governance structure and escalation

3. RTA

STRENGTH	**WEEKNESSES**
• PMI method is followed to manage program	• Align cross departments of the priority of the program
• Programs are aligned with strategy	• Program mangers not always planning for contingencies and preparing we'll for worst scenario
• Required information and monitoring a specific program both available	
• Budget are secured and divided among internal teams	
• Available tools such as Typical Office Templates a and OPMS)	
• Project management mature organization	
• Project management plans are we'll developed, executed, monitored and controlled.	
OPPORTUNITIES	**THREATS**
• Clear communication plan from the beginning	• No plan for mitigation held with vendors and external customers if things didn't went right
• We'll competing on the region level with Etisalat	
• Systematic survey completed for overall transportation and check the ratings	
• Conduct risk assessment around critical success factors to increase project success	

SWOT Analysis on Group Project Questionnaire
1. ADNOC

STRENGTH	**WEEKNESSES**

STRENGTH	WEEKNESSES
- Measuring KPIs against each of the business process - OPM3 avail great agility and more productivity - The Program (ONE-ERP) covers organization vision and mission	- Lack of system availability as the plan is to go for one network service - Possible of miscommunication as the key personal for each activity is yet to be defined
OPPORTUNITIES	**THREATS**
- Unify other business process such as HR across all sub-companies - Integrate facilities for usage of more resources	- Employees that resist the change - System replace a role of an individual in the organization

2. Etisalat

STRENGTH	WEEKNESSES
- Strengthen the communication - Execution	- No written policies and procedures as part of challenges - Lack of employees empowerment in decision making
OPPORTUNITIES	**THREATS**
- Go for Future certified with OPM3 - Avail written rules and policies	- Unclear structure - Poor message deliver from management to the employee

3. RTA

STRENGTH	WEEKNESSES
Integration, standardized and well informed policies	Dependence on PM as main tool to execute strategy
OPPORTUNITIES	**THREATS**
Integrate more facilities	Poor reliability

6. RECOMMENDATION

Regarding data analysis and research results, we propose the following:

We recommend organizing a session in organizations management in following companies such as Etisalat, RTA and ADNOC and brief about OPM3 and why it's important to be considered. Also we would recommend for those organization specifically the central PMO to learn about OPM3 and the benefits thus to implement a proper OPM3 in their organization to deliver projects, program and portfolio with alignment on government strategy. Also, since there was people who were resisting to share information, we would also recommend them to be more open and accepting to exchange the knowledge with the learner and themselves thus to accelerate the transmission and be more aware of what's happening globally. We recommend integration system/program for all facility level in an organization to drive the vision of an organization and management support in order to be more efficient.

7. CONCLUSION

Managing projects is a very critical and most demanding task in many organizations. It's the key engine of the executing projects, programs and portfolios. Moreover, without proper communication of the strategy into the lower functions of the organization, there will be challenges faced in obtaining the objective and goal of the strategy which has been set by executives of the organization. As the result, the duty of OPM3 comes as implementing the best practices and improving the current process, thus to organize and deliver the purpose of the strategy effectively and efficiently, by aligning the strategy of the organization on projects, programs and portfolio. Also, the most criteria used in organizations around UAE to measure the progress are the schedule or the timeline of the project and program overall delivery following with customer satisfaction then cost and quality. Moreover, qualitative and quantitative data are both essential

used to manage the program, and each used base on availability and accessibility of the project manager into those and here the PMO job comes to support the project manager to reach the information with minimum challenge. Also, it is worth to mention OPM3 is model which is established by PMI and if it's implemented correctly it will help UAE organization to be more efficient hence it's a maturity model for organizational project management. Throughout the interviews, mainly 2 of the organization did not found qualitative nor quantitative data to be use in their program. Furthermore, tight schedule given to employee who wants management support in completing the program of individual organization can be challenging, therefore PMO support is highly required in this matter to accelerate the process and provide the needed reports in timely matter. Although most of the organization do not have OPM3 in their organization, the interview conducted with them resulted to make them very interested to know more and see how it will be beneficial to their organization goal. And most of them declared as their organization do have their own practices and certain method done internally and similar to OPM3.

REFERENCES

Abudaqa, A., Alzahmi, R. A., Almujaini, H., & Ahmed, G. (2022). Does innovation moderate the relationship between digital facilitators, digital transformation strategies and overall performance of SMEs of UAE? *International Journal of Entrepreneurial Venturing*, *14*(3), 330–350. https://doi.org/10.1504/ijev.2022.124964

Abudaqa, A., Hilmi, M. F., Almujaini, H., Alzahmi, R. A., & Ahmed, G. (2021). Students' perception of e-Learning during the Covid Pandemic: a fresh evidence from United Arab Emirates (UAE). *Journal of E-Learning and Knowledge Society*, *17*(3), 110–118. https://doi.org/10.20368/1971-8829/1135556

Ahmed, G., Abudaqa, A., Jayachandran, C., Limbu, Y., & Alzahmi, R. (2022). Nation Branding as a Strategic Approach for Emerging Economies: The Case of UAE. In *Marketing Communications and Brand Development in Emerging Economies* (pp. 41–57). Springer. https://doi.org/10.1007/978-3-030-88678-3_3

Ahmed, G., & Nabeel Al Amiri. (2022). the Transformational Leadership of the Founding Leaders of the United Arab Emirates: Sheikh Zayed Bin Sultan Al Nahyan and Sheikh Rashid Bin Saeed Al Maktoum. *International Journal of Technology, Innovation and Management (IJTIM)*, *2*(1), 1. https://doi.org/10.54489/ijtim.v2i1.58

Aityassine, F., Soumadi, M., Aldiabat, B., Al-Shorman, H., Akour, I., Alshurideh, M., & Al-Hawary, S. (2022). The effect of supply chain resilience on supply chain performance of chemical industrial companies. *Uncertain Supply Chain Management*, *10*(4), 1271–1278.

Akour, I. A., Al-Maroof, R. S., Alfaisal, R., & Salloum, S. A. (2022). A conceptual framework for determining metaverse adoption in higher institutions of gulf area: An empirical study using hybrid SEM-ANN approach. *Computers and Education: Artificial Intelligence*, *3*(10005), 2. https://doi.org/10.1016/j.caeai.2022.100052

Akour, I., Alnazzawi, N., Alshurideh, M., Almaiah, M. A., Al Kurdi, B., Alfaisal, R. M., & Salloum, S. (2022). A Conceptual Model for Investigating the Effect of Privacy Concerns on E-Commerce Adoption: A Study on United Arab Emirates Consumers. *Electronics (Switzerland)*, *11*(22), 3648. https://doi.org/10.3390/electronics11223648

Akour, I., Alshurideh, M., Al Kurdi, B., Al Ali, A., & Salloum, S. (2021). Using Machine Learning Algorithms to Predict People's Intention to Use Mobile Learning Platforms During the COVID-19 Pandemic: Machine Learning Approach. *JMIR Medical Education*, *7*(1), 1–17.

Akour, I., Rahamneh, A. A. L., Al Kurdi, B., Alhamad, A., Al-Makhariz, I., Alshurideh, M., & Al-Hawary, S. (2023). Using the Canonical Correlation Analysis Method to Study Students' Levels in Face-to-Face and Online Education in Jordan. *Information Sciences Letters*, *12*(2), 901–910.

Al-Awamleh, H. K., Alhalalmeh, M. I., Alatyat, Z. A., Saraireh, S., Akour, I., Alneimat, S., Alathamneh, F. F., Abu-Farha, Y. S., & Al-Hawary, S. I. S. (2022). The effect of green supply chain on sustainability: Evidence from the pharmaceutical industry. *Uncertain Supply Chain Management*, *10*(4), 1261–1270. https://doi.org/10.5267/j.uscm.2022.8.002

Al-Dmour, N. A., Ali, L., Salahat, M., Alshurideh, M., Alzoubi, H. M., Ghazal, T. M., & Chabani, Z. (2023). Information Systems Solutions for the Database Problems. *Studies in Computational Intelligence*, *2023*(1056), 703–715.

Al-Kassem, A., Bakri, A., & In'airat, M. (2013). Evaluation Tools of Total Quality Management in Business Organizations. *European Journal of Business and Management*, *5*, 41–51.

Al-Kassem, A. H. (2017). Recruitment and Selection Practices in Business Process Outsourcing Industry. *Archives of Business Research*, *5*(3), 40–

52. https://doi.org/10.14738/abr.53.2180

Al-Kassem, A. H., Aguenza, B. B., & Alghurabli, Z. E. (2022). Accreditation of Academic Programs : Implications on Quality Governance and Administrationof Taguig City University. *Journal of Positive School Psychology*, *6*(4), 3908–3923. https://journalppw.com/index.php/jpsp/article/view/3992/2625

Al-Kassem, Aguenza, B. B., Hami, A., & Som, A. P. M. (2012). Social Media and Productivity in the Workplace: Challenges and Constraints. *Interdisciplinary Journal of Research in Business*, *2*(2), 22–26. http://www.idjrb.com/articlepdf/article223.pdf

Al-Kassem, H. (2014). Determinants of employee's overall satisfaction toward training and development programs. *International Journal of Economics, Finance and Management*, *3*(3), 129–135. http://www.ejournalofbusiness.org

Al-Maroof, A., Salloum, A., Al-Maroof, R. S., Akour, I., Aljanada, R., Alfaisal, A. M., Alfaisal, R. M., Aburayya, A., & Salloum, S. A. (2021). Acceptance determinants of 5G services Title Acceptance determinants of 5G services International Journal of Data and Network Science Acceptance determinants of 5G services. *Canada. International Journal of Data and Network Science*, *5*(4), 613–628. http://usir.salford.ac.uk/id/eprint/61985/

Al-Maroof, R. S., Alahbabi, N. M. N., Akour, I., Alhumaid, K., Ayoubi, K., Alnnaimi, M., Thabit, S., Alfaisal, R., Aburayya, A., & Salloum, S. (2022). Students' perception towards behavioral intention of audio and video teaching styles: An acceptance study. *International Journal of Data and Network Science*, *6*(2), 603–618. https://doi.org/10.5267/j.ijdns.2021.11.004

Al-Maroof, R. S., Alhumaid, K., Akour, I., & Salloum, S. (2021). Factors that affect e-learning platforms after the spread of covid-19: Post acceptance study. *Data*, *6*(5). https://doi.org/10.3390/data6050049

Al-Maroof, R. S., Alnazzawi, N., Akour, I. A., Ayoubi, K., Alhumaid, K., Alahbabi, N. M., Alnnaimi, M., Thabit, S., Alfaisal, R., Aburayya, A., & Salloum, S. (2021). The effectiveness of online platforms after the pandemic: Will face-to-face classes affect students' perception of their behavioural intention (BIU) to use online platforms? *Informatics*, *8*(4), 4. https://doi.org/10.3390/informatics8040083

Al-Maroof, R. S., Alnazzawi, N., Akour, I., Ayoubi, K., Alhumaid, K., Nasser, N. M., Alaraimi, S., Al-Bulushi, A. A., Thabit, S., Alfaisal, R., Aburayya, A., & Salloum, S. (2022). Students' perception towards using electronic feedback after the pandemic: Post-acceptance study. *International Journal of Data and Network Science*, *6*(4), 1233–1248.

https://doi.org/10.5267/j.ijdns.2022.6.010

AlDhaheri, H., Hilmi, M. F., Abudaqa, A., Alzahmi, R. A., & Ahmed, G. (2023). The relationship between HRM practices, innovation, and employee productivity in UAE public sector: a structural equation modelling approach. *International Journal of Process Management and Benchmarking*, *13*(2), 157–176.

Alhamad, A. Q. M., Akour, I., Alshurideh, M., Al-Hamad, A. Q., Kurdi, B. Al, & Alzoubi, H. (2021). Predicting the intention to use google glass: A comparative approach using machine learning models and PLS-SEM. *International Journal of Data and Network Science*, *5*(3), 311–320. https://doi.org/10.5267/j.ijdns.2021.6.002

Aljumah, A. I., Nuseir, M. T., & Alam, M. M. (2021a). Organizational performance and capabilities to analyze big data: do the ambidexterity and business value of big data analytics matter? *Business Process Management Journal*, *27*(4), 1088–1107.

Aljumah, A. I., Nuseir, M. T., & Alam, M. M. (2021b). Traditional marketing analytics, big data analytics and big data system quality and the success of new product development. *Business Process Management Journal*, *27*(4), 1108–1125.

Aljumah, A. I., Nuseir, M. T., & El Refae, G. A. (2022a). Business Analytics and Competitive Advantage for SMEs in UAE: A Mediating Role of Technology Assets. *In 2022 International Arab Conference on Information Technology (ACIT)*, 1–9.

Aljumah, A. I., Nuseir, M. T., & El Refae, G. A. (2022b). Exploring the Effect of Social Media Marketing and Destination image on Destination Loyalty in Covid-19 Times: Sequential Mediating Role of Brand Love and Brand Loyalty. *In 2022 International Arab Conference on Information Technology (ACIT)*, 1–8.

Aljumah, A. I., Nuseir, M. T., & El Refae, G. A. (2022c). The effect of sensory marketing factors on customer loyalty during Covid 19: Exploring the mediating role of customer satisfaction. *International Journal of Data and Network Science*, *6*(4), 1359–1368. https://doi.org/10.5267/j.ijdns.2022.5.015

Aljumah, A. I., Shahroor, H., Nuseir, M. T., & El Refae, G. A. (2022). The effects of employee commitment and environment uncertainty on product quality: The mediating role of supply chain integration. *Uncertain Supply Chain Management*, *10*(4), 1379–1386. https://doi.org/10.5267/j.uscm.2022.7.001

Aljumah, A., Nuseir, M., & Refae, G. (2023). Examining the effect of social media interaction, E-WOM, and public relations: Assessing the mediating role of brand awareness. *International Journal of Data and Network Science*, *7*(1), 467–476.

Aljumah, A., Nuseir, M. T., & Islam, A. (2020). Impacts of

service quality, satisfaction and trust on the loyalty of foreign patients in Malaysian medical tourism. International journal of innovation. *Creativity and Change, 11*(2), 451–467.

Almasaeid, T., Alzoubi, H., El Khatib, M., Ghazal, T., Alshurideh, M., Al-Dmour, N., Sattar, O., & Ae. (2022). Futuristic Design & Development of Learning Management System including Psychological Factors Resolution. *Journal for ReAttach Therapy and Developmental Diversities*, *5*, 176–188.

Alshawabkeh, A., Nuseir, M. T., & Aljumah, A. (2021). Impacts of social media on the buying intention of the consumers in Edinburgh, UK. *International Journal of Procurement Management*, *14*(4), 470–486. https://doi.org/10.1504/IJPM.2021.116036

Alshurideh, M., Al Kurdi, B. H., Alzoubi, H. M., & Salloum, S. (2023). *The Effect of Information Technology on Business and Marketing Intelligence Systems* (Vol. 1056). Springer Nature.

Alshurideh, M., Almasaeid, T., El Khatib, M., Alzoubi, H., Ghazal, T., Hamadneh, S., Al-Dmour, N., & Sattar, O. (2022). Components Determining the Behavior and Psychological impact of Entrepreneurship among Higher Vocational Students. *Journal for ReAttach Therapy and Developmental Diversities*, *5*, 189–200.

Alshurideh, M., Alzoubi, H., Alshurideh, M., Kurdi, B., Obeidat, B., Hamadneh, S., & Ahmad, A. (2022). The influence of supply chain partners' integrations on organizational performance: The moderating role of trust. *Uncertain Supply Chain Management*, *10*(4), 1191–1202.

Alshurideh, M. T., Al-Hadrami, A., Alquqa, E. K., Alzoubi, H. M., Hamadneh, S., & Al Kurdi, B. (2023). The effect of lean and agile operations strategy on improving order-winners: Empirical evidence from the UAE food service industry. *Uncertain Supply Chain Management*, *11*(1), 87–94. https://doi.org/10.5267/j.uscm.2022.11.007

Alshurideh, M. T., Al Kurdi, B., Alhamad, A., Hamadneh, S., Alzoubi, H. M., & Ahmad, A. (2023). Does social customer relationship management (SCRM) affect customers' happiness and retention? A service perspective. *Uncertain Supply Chain Management*, *11*(1), 277–288. https://doi.org/10.5267/j.uscm.2022.9.015

Alshurideh, M. T., Alquqa, E. K., Alzoubi, H. M., Al Kurdi, B., & Alhamad, A. (2023). The impact of cyber resilience and robustness on supply chain performance: Evidence from the UAE chemical industry. *Uncertain Supply Chain Management*, *11*(1), 187–194. https://doi.org/10.5267/j.uscm.2022.10.008

Alshurideh, M. T., Alquqa, E. K., Alzoubi, H. M., Al Kurdi, B., & Hamadneh, S. (2023). The effect of

information security on e-supply chain in the UAE logistics and distribution industry. *Uncertain Supply Chain Management*, *11*(1), 145–152. https://doi.org/10.5267/j.uscm.2022.11.001

Alshurideh, M. T., Alzoubi, H. M., El khatib, M., Ghazal, T. M., Al-Dmour, N. A., Sattar, O., & Kukunuru, S. (2022). An Experimental Evaluation on Resource Attribute, Internal Risks and Regime Structure of R&D Association-Including Exploration of Moderating Effect of Association Management Capability, Psychological. *Journal for ReAttach Therapy and Developmental Diversities*, *5*(2), 201–215.

Alshurideh, M. T., Alzoubi, H. M., Ghazal, T. M., Alami, R., & Al Masaeid, T. (2022). Risk Management Model for Telecom Enterprises Based on Variables (RM, SO, RC, SI) with Nature, Sense and Positive Psychology Hypothesis. *Journal for ReAttach Therapy and Developmental Diversities*, *2022*, 5.

Alzoubi, H., & Ahmed, G. (2019). Do TQM practices improve organisational success? A case study of electronics industry in the UAE. *International Journal of Economics and Business Research*, *17*(4), 459–472.
https://doi.org/10.1504/IJEBR.2019.099975

Alzoubi, H., Alshurideh, M., Gasaymeh, A., Ahmed, G., & Kurd, B. Al. (2020). Loyalty program effectiveness: Theoretical reviews and practical proofs. *Uncertain Supply Chain Management*, *8*(3), 599–612. https://doi.org/10.5267/j.uscm.2020.2.003

Alzoubi, H., Alshurideh, M., Kurdi, B. Al Akour, I., & Aziz, R. (2022). Does BLE technology contribute towards improving marketing strategies, customers' satisfaction and loyalty? The role of open innovation. *International Journal of Data and Network Science*, *6*(2), 449–460. https://doi.org/10.5267/j.ijdns.2021.12.009

Alzoubi, H. M., Ahmed, G., Al-Gasaymeh, A., & Al Kurdi, B. (2020). Empirical study on sustainable supply chain strategies and its impact on competitive priorities: The mediating role of supply chain collaboration. *Management Science Letters*, *10*(3), 703–708.
https://doi.org/10.5267/j.msl.2019.9.008

Alzoubi, H. M., Ahmed, G., & Alshurideh, M. (2022). An empirical investigation into the impact of product quality dimensions on improving the order-winners and customer satisfaction. *International Journal of Productivity and Quality Management*, *36*(2), 169–186. https://doi.org/10.1504/IJPQM.2021.10037887

Alzoubi, H. M., Alshurideh, M., Kurdi, B. Al, Akour, I., Obeidat, B., & Alhamad, A. (2022). The role of digital marketing channels on consumer buying decisions through eWOM in the Jordanian markets. *International Journal of Data and*

Network Science, *6*(4), 1175–1185. https://doi.org/10.5267/j.ijdns.2022.7.002

Alzoubi, H. M., Alshurideh, M. T., Al Kurdi, B., Ghazal, T. M., Said, R. A., AlHamad, A. Q., Hamadneh, S., Sahawneh, N., & Al-kassem, A. H. (2022). Fuzzy assisted human resource management for supply chain management issues. *Annals of Operations Research*, *2*(308), 617–629. https://doi.org/10.1007/s10479-021-04472-8

Alzoubi, H. M., Ghazal, T. M., El khatib, M., Alshurideh, M. T., Alami, R., & Al Masaeid, T. (2022). Creation of Indicator System for Quality Estimation of Safety Management of Personnel and it's Psychological impact on Industrial Enterprises. *Journal for ReAttach Therapy and Developmental Diversities*, *5*(SpecialIssue2), 143–151.

Alzoubi, H. M., In'airat, M., & Ahmed, G. (2022). Investigating the impact of total quality management practices and Six Sigma processes to enhance the quality and reduce the cost of quality: the case of Dubai. *International Journal of Business Excellence*, *27*(1), 94–109. https://doi.org/10.1504/IJBEX.2022.123036

Alzoubi, H. M., Kurdi, B. Al, Akour, I., & Alshurideh, M. T. (2022). The effect of blockchain and smart inventory system on supply chain performance: Empirical evidence from retail industry. *Uncertain Supply Chain Management*, *10*(4), 1111–1116. https://doi.org/10.5267/j.uscm.2022.9.001

Alzoubi, H. M., Kurdi, B. Al, Alshurideh, M., Akour, I., Tariq, E., & Alhamad, A. (2022). The effect of social media influencers' characteristics on consumer intention and attitude toward Keto products purchase intention. *International Journal of Data and Network Science*, *6*(4), 1135–1146. https://doi.org/10.5267/j.ijdns.2022.7.006

Alzoubi, H. M., Mehmood, T., Alshurideh, M., Al-Gasaymeh, A., & Ahmed, G. (2019). Schumpeterian entrepreneurship theory: Evolution and relevance. *Academy of Entrepreneurship Journal*, *25*(4), 1–10.

Alzoubi, H. M., Sahawneh, N., Alhamad, A. Q., Malik, U., Majid, A., & Atta, A. (2022). Analysis Of Cost Prediction In Medical Insurance Using Modern Regression Models. *International Conference on Cyber Resilience, ICCR 2022*. https://doi.org/10.1109/ICCR56254.2022.9995926

Amiri, N. Al, Rahim, R. E. A., & Ahmed, G. (2020). Leadership styles and organizational knowledge management activities: A systematic review. *Gadjah Mada International Journal of Business*, *22*(3), 250–275. https://doi.org/10.22146/gamaijb.49903

Arshad, M., Brohi, M., Soomro, T., Ghazal, T., Alzoubi, H., & Alshurideh, M. (2023). *NoSQL: Future of BigData Analytics Characteristics and Comparison with RDBMS* (pp. 1927–1951). https://doi.org/10.1007/978-3-031-12382-5_106

Aziz, A., Brohi, M. N., Soomro, T. R., Alzoubi, H. M., Ghazal, T. M., & Alshurideh, M. (2023). Aircraft Turnaround Manager (ATM): A Solution to Airport Operations. *Studies in Computational Intelligence*, *2023*(1056), 679–702.

Bawaneh, A., Massadeh, D., Akour, I., Abu haija, A., & Alshurideh, M. (2023). The Impact of Green Auditing on Organizational Performance in Jordan: the Moderating Effect of the Auditor's Opinion. *Information Sciences Letters*, *12*, 1505–1512. https://doi.org/10.18576/isl/120338

Bento, I., Gomes, J., & Romão, M. (2019). The relationship between OPM3 and Project Performance: A multiple case study. *Journal of Modern Project Management*, *6*(3), 46–57. https://doi.org/10.19255/JMPM01803

Blooshi, I., Alamim, A., Said, R., Taleb, N., Ghazal, T., Ahmad, M., Alzoubi, H., & Alshurideh, M. (2023). *IT Governance and Control: Mitigation and Disaster Preparedness of Organizations in the UAE* (pp. 661–677). https://doi.org/10.1007/978-3-031-12382-5_35

Desai, S., & Corporate, G. E. (2007). *Organizational Project Management Maturity Model (OPM3): A Case Study*. 1305–1308.

Domingues, L., & Ribeiro, P. (2023). Project management maturity models: Proposal of a framework for models comparison. *Procedia Computer Science*, *219*, 2011–2018. https://doi.org/10.1016/j.procs.2023.01.502

E., F., & S., T. (2021). Project management maturity models literature review and new developments. *Journal of Modern Project Management*, *8*(3), 31–45.

El Khatib, M., Ahmed, G., Alshurideh, M., & Al-Nakeeb, A. (2023). Interdependencies and Integration of Smart Buildings and Smart Cities: A Case of Dubai. In M. Alshurideh, A. K. B. Hikmat, R. Masa'deh, A. H. M., & S. Salloum (Eds.), *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 1637–1656). Springer International Publishing. https://doi.org/10.1007/978-3-031-12382-5_89

El Khatib, M., Alabdooli, K., AlKaabi, A., & Al Harmoodi, S. (2020). Sustainable Project Management: Trends and Alignment. *Theoretical Economics Letters*, *10*(06), 1276–1291. https://doi.org/10.4236/tel.2020.106078

El Khatib, M., Alnaqbi, A., Alnaqbi, A., Alsuwaidi, H., Marri, M., & Ankit, A. (2023). Implementing IOT in Effective Project Management. *International Journal of Computers and Their Applications*, *30*,

192–200.

El Khatib, M., Alzoubi, H., Hamidi, S., Alshurideh, M., Baydoun, A., & Al-Nakeeb, A. (2023). Impact of Using the Internet of Medical Things on e-Healthcare Performance: Blockchain Assist in Improving Smart Contract. *ClinicoEconomics and Outcomes Research : CEOR*, *2023*, 397–411. https://doi.org/10.2147/CEOR.S407778

El khatib, M., Beshwari, F., Beshwari, M., Beshwari, A., Alzoubi, H. M., & Alshurideh, M. (2023). Covid19 Unknown Risks---Using AI for Disaster Recovery. In M. Alshurideh, A. K. B. Hikmat, R. Masa'deh, A. H. M., & S. Salloum (Eds.), *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 2113–2137). Springer International Publishing. https://doi.org/10.1007/978-3-031-12382-5_116

El Khatib, M., Beshwari, F., Beshwari, M., Beshwari, A., Alzoubi, H. M., & Alshurideh, M. (2023). Can Better Capabilities Lead to Better Project and Program Governance? Cases from Dubai. In M. Alshurideh, A. K. B. Hikmat, R. Masa'deh, A. H. M., & S. Salloum (Eds.), *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 1295–1313). Springer International Publishing. https://doi.org/10.1007/978-3-031-12382-5_71

El Khatib, M., Hamidi, S., Ameeri, I., Zaabi, H., & Marqab, R. (2022). Digital Disruption and Big Data in Healthcare - Opportunities and Challenges. *ClinicoEconomics and Outcomes Research*, *14*, 563–574. https://doi.org/10.2147/CEOR.S369553

El Khatib, M., Ibrahim, A., Blooshi, S., Almansoori, S., & El Khatib, A. (2023). *Digital Transformation and Disruptive Technologies: Effect of 3D Printing on Managing Projects*. 1–13. https://doi.org/10.1109/ICCR56254.2022.9996011

El Khatib, M., Khadim, S., Ketbi, W., Kuwaiti, N., & El Khatib, A. (2023). *Digital Transformation and Disruptive Technologies: Effect of Blockchain on Managing Construction Projects*. 1–9. https://doi.org/10.1109/ICCR56254.2022.9995756

El Khatib, M., Khayat, A., Mansoori, S., Alzaabi, A., & Ankit, A. (2023). *Metaverse Skills for Executives and Senior Managers: The Pros and Cons*. 1–7. https://doi.org/10.1109/ICBATS57792.2023.10111483

El Khatib, M. M., Abidi, N., Al-Nakeeb, A., Alshurideh, M., & Ahmed, G. (2023). Dubai Smart City as a Knowledge Based Economy. In M. Alshurideh, A. K. B. Hikmat, R. Masa'deh, A. H. M., & S. Salloum (Eds.), *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 1657–1672). Springer International Publishing. https://doi.org/10.1007/978-3-031-12382-5_90

El Khatib, M. M., & Ahmed, G. (2018). Improving Efficiency in IBM Asset Management Software System "Maximo": A Case Study of Dubai Airports and Abu Dhabi National Energy Company. *Theoretical Economics Letters*, *08*(10), 1816–1829. https://doi.org/10.4236/tel.2018.810119

El Khatib, M. M., & Ahmed, G. (2020). Robotic pharmacies potential and limitations of artificial intelligence: A case study. *International Journal of Business Innovation and Research*, *23*(3), 298–312. https://doi.org/10.1504/IJBIR.2020.110972

El Khatib, M. M., Al-Nakeeb, A., & Ahmed, G. (2019). Integration of Cloud Computing with Artificial Intelligence and Its Impact on Telecom Sector—A Case Study. *IBusiness*, *11*(01), 1–10. https://doi.org/10.4236/ib.2019.111001

El khatib, M., Mahmood, A., Al Azizi, A., Al Marzooqi, A., Al Abdooli, K., Al Marzooqi, S., Al Jasmi, S., Alzoubi, H. M., & Alshurideh, M. (2023). A Trial to Improve Program Management in Government Bodies Through Focusing on Program Resource Management: Cases from UAE. In M. Alshurideh, A. K. B. Hikmat, R. Masa'deh, A. H. M., & S. Salloum (Eds.), *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 1315–1340). Springer International Publishing. https://doi.org/10.1007/978-3-031-12382-5_72

El Khatib, M., Yaish, A., & Ali, H. (2021). Implementation Challenges of Data Quality Management -Cases from UAE Public Sector. *IBusiness*, *13*, 144–153. https://doi.org/10.4236/ib.2021.133009

El Khatib, M., Zitar, R., Alnaqbi, K., Alnaqbi, W., Alharmoodi, S., & Baydoun, A. (2023). Effect of Big Data and Analytics on Managing Projects. *International Journal of Computers and Their Applications*, *30*, 173–182.

Elkhatib, M., Al Hosani, A., Al Hosani, I., & Albuflasa, K. (2022). Agile Project Management and Project Risks Improvements: Pros and Cons. *Modern Economy*, *13*(9), 1157–1176.

Farrukh, M., Soomro, T. R., Ghazal, T. M., Alzoubi, H. M., & Alshurideh, M. (2023). Perspectives of Online Education in Pakistan: Post-covid Scenario. In *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 519–550). Springer.

Gaytan, J. C. T., Rafiuddin, A., Sisodia, G. S., Ahmed, G., & Paramaiah, C. (2023). Pass-through Effects of Oil Prices on LATAM Emerging Stocks before and during COVID-19: An Evidence from a Wavelet - VAR Analysis. *International Journal of Energy Economics and Policy*, *13*(1), 529–543.

Ghazal, T. M., Al-Dmour, N. A., Said, R. A., Moubayed, A., Ali, L., Alzoubi, H. M., & Alshurideh, M. (2023). DDoS Intrusion Detection with Ensemble Stream Mining for IoT Smart Sensing Devices. *Studies in*

Computational Intelligence, *2023*(1056), 1987–2012.

Ghazal, T. M., Hasan, M. K., Abdullah, S. N. H. S., Alzoubi, H. M., & Alshurideh, M. (2023). An Integrated Cloud and Blockchain Enabled Platforms for Biomedical Research. *Studies in Computational Intelligence*, *2023*(1056), 2037–2053.

Ghazal, T. M., Hasan, M. K., Ahmad, M., Alzoubi, H. M., & Alshurideh, M. (2023). Machine Learning Approaches for Sustainable Cities Using Internet of Things. *Studies in Computational Intelligence*, *2023*(1056), 1969–1986. https://doi.org/10.1007/978-3-031-12382-5_108

Ghazal, T. M., Hasan, M. K., Alzoubi, H. M., Alshurideh, M., Ahmad, M., & Akbar, S. S. (2023). Internet of Things Connected Wireless Sensor Networks for Smart Cities. *Studies in Computational Intelligence*, *2023*(1056), 1953–1968.

Guangshe, J., Li, C., Jianguo, C., Shuisen, Z., & Jin, W. (2008). Application of organizational project management maturity model (OPM3) to construction in China: An empirical study. *Proceedings of the International Conference on Information ManagementProceedings of the International Conference on Information Management, Innovation Management and Industrial Engineering, ICIII 2008*, *2*, 56–62. https://doi.org/10.1109/ICIII.2008.182

Gulseven, O., & Ahmed, G. (2022). The State of Life on Land (SDG 15) in the United Arab Emirates. *International Journal of Social Ecology and Sustainable Development*, *13*(1), 1–15. https://doi.org/10.4018/ijsesd.306264

Hani Al-Kassem, A. (2021). Significance of Human Resources Training and Development on Organizational Achievement. *PalArch's Journal of Archaeology of Egypt / Egyptology*, *18*(7), 693–707.

Jaleel, F., & Azhar K. Mansur. (2013). Project Management Maturity Models and Organizational Project Management Maturity Model (OPM3®): A Critical Morphological Evaluation. *World Academy of Science, Engineering and Technology*, *77*(May), 60–63. https://www.researchgate.net/publication/3168 82022

Kassem, A., & Martinez, E. B. (2022). Operationalization of Negosyo Center as an Entrepreneurial Strategy to Selected Micro, Small, and Medium Enterprises in Taguig City. *Global Business and Management Research*, *14*(2), 88–104.

Kent Crawford, J. (2006). The project management maturity model. *Information Systems Management*, *23*(4), 50–58. https://doi.org/10.1201/1078.10580530/46352.

23.4.20060901/95113.7

Khan, A., Hasana, M. K., Ghazal, T. M., Islam, S., Alzoubi, H. M., Mokhtar, U. A., Alam, R., & Ahmad, M. (2022). Collaborative Learning Assessment via Information and Communication Technology. *Proceedings - 2022 RIVF International Conference on Computing and Communication Technologies, RIVF 2022*, 311–316. https://doi.org/10.1109/RIVF55975.2022.10013 841

Khatib, E., M., Z., A., R., & Al-Nakeeb, A. (2021). The effect of AI on project and risk management in health care industry projects in the United Arab Emirates (UAE). *International Journal of Applied Engineering Research (Netherlands)*, *6*, 1.

Khatib, M. El, Alzoubi, H. M., Mulla, A. Al, & Ketbi, W. Al. (2022). The Role of Blockchain in E-Governance and Decision-Making in Project and Program Management. *Advances in Internet of Things*, *12*(03), 88–109. https://doi.org/10.4236/ait.2022.123006

Khatib, M. El, Beshwari, F., Beshwari, M., & Beshwari, A. (2021). The impact of blockchain on project management. *ICIC Express Letters*, *15*(5), 467–474. https://doi.org/10.24507/icicel.15.05.467

Khatib, M. El, Shehhi, H. Al, & Nuaimi, M. Al. (2023). How Big Data and Big Data Analytics Mediate Organizational Risk Management. *Journal of Financial Risk Management*, *12*(01), 1–14. https://doi.org/10.4236/jfrm.2023.121001

Lee, K. L., Nawanir, G., Cheng, J., Alzoubi, H., & Alshurideh, M. (2023). *Educational Supply Chain Management: A View on Professional Development Success in Malaysia* (pp. 2473–2490). https://doi.org/10.1007/978-3-031-12382-5_136

Lee, K. L., Wong, S., Alzoubi, H., Al Kurdi, B., Alshurideh, M., & El Khatib, M. (2023). Adopting smart supply chain and smart technologies to improve operational performance in manufacturing industry. *International Journal of Engineering Business Management*, *15*, 1–14. https://doi.org/10.1177/18479790231200614

Louzi, N., Alzoubi, H. M., Alshurideh, M. T., El khatib, M., Ghazal, T. M., & Kukunuru, S. (2022). Psychological & Prototypical Model of Execution Management evaluation for the framework Development. *Journal for ReAttach Therapy and Developmental Diversities*, *5*(SpecialIssue2), 216–223.

Louzi, N., Alzoubi, H. M., El Khatib, M., Ghazal, T. M., Alshurideh, M., & Kukunuru, S. (2022). Psychological Health and Environmental Effect of using Green Recycled Amassed Concrete on Construction. *Journal for ReAttach Therapy and Developmental Diversities*, *5*(SpecialIssue2), 163–175.

M. Alzoubi, H., Ghazal, T., Hasan, M., Alshurideh, M., Ahmad, M., Akbar, S., Al Kurdi, B., & Akour, I. (2021). IoT for Smart Cities: Machine Learning Approaches in Smart Healthcare-A Review. *Future Internet*, *13*(8), 218. https://doi.org/10.3390/fi13080218

Machado, F., Duarte, N., Amaral, A., & Barros, T. (2021). Project Management Maturity Models for Construction Firms. *Journal of Risk and Financial Management*, *14*(12). https://doi.org/10.3390/jrfm14120571

Mat Som, A. P., & Kassem, H. Al. (2013). Domestic Tourism Development in Asir Region, Saudi Arabia. *Journal of Tourism & Hospitality*, *02*. https://doi.org/10.4172/2167-0269.S5-001

Mubeen, S., Shahid, M. H., Sahawneh, N., Al-Kassem, A. H., Ahmad, A., & Naseer, I. (2022). *Education, Employment and Women Empowerment in an Agrarian Economy: A Case Study*. 1–9. https://doi.org/10.1109/icbats54253.2022.9759025

Nadzri, W., Hashim, A., Majid, M., Jalil, N., Alzoubi, H., & Alshurideh, M. (2023). *Share Your Beautiful Journey: Investigating User Generated Content (UGC) and Webrooming Among Malaysian Online Shoppers* (pp. 2265–2285). https://doi.org/10.1007/978-3-031-12382-5_124

Nikolaenko, V., & Sidorov, A. (2023). Assessment of Project Management Maturity Models Strengths and Weaknesses. *Journal of Risk and Financial Management*, *16*(2). https://doi.org/10.3390/jrfm16020121

Nuseir, M., & Elrefae, G. (2022). The effects of facilitating conditions. *Customer Experience and Brand Loyalty on Customer-Based Brand Equity through Social Media Marketing*, *6*(3), 875–884.

Nuseir, M. T. (2020). Potential impacts of blockchain technology on business practices of bricks and mortar (B&M) grocery stores. *Business Process Management Journal*, *27*(4), 1256–1274. https://doi.org/10.1108/BPMJ-06-2020-0267

Nuseir, M. T. (2021). Assessing the impact of brand equity and customer experience on brand loyalty in the United Arab Emirates' hotel industry. *International Journal of Business Excellence*, *25*(4), 459–473. https://doi.org/10.1504/IJBEX.2021.119753

Nuseir, M. T., & Aljumah, A. (2020). The role of digital marketing in business performance with the moderating effect of environment factors among SMEs of UAE. *International Journal of Innovation, Creativity and Change*, *3*, 310–324.

Nuseir, M. T., & Aljumah, A. (2022). The impact of entrepreneur orientation on sustainable entrepreneurship among SMEs in the UAE: mediating effects of the sustainability orientation and bricolage behaviours of entrepreneurs. *International Journal of Trade and Global Markets*, *16*(1–3), 250–264. https://doi.org/10.1504/ijtgm.2022.128134

Nuseir, M. T., Aljumah, A. I., & El-Refae, G. A. (2022). Digital marketing and public relations: A way to promote public relations value. *International Journal of Data and Network Science*, *6*(4), 1331–1340. https://doi.org/10.5267/j.ijdns.2022.6.002

Nuseir, M. T., Aljumah, A. I., & El Refae, G. A. (2022a). The Influence of E-Iearning M-learning. *And D-Learning on the Student Performance: Moderating Role of Institutional Support*, 1–9.

Nuseir, M. T., Aljumah, A. I., & El Refae, G. A. (2022b). Trust in Adoption of Internet of Things: Role of Perceived Ease of Use and Security. *In 2022 International Arab Conference on Information Technology (ACIT)*, 1–7.

Nuseir, M. T., Basheer, M. F., & Aljumah, A. (2020). Antecedents of entrepreneurial intentions in smart city of Neom Saudi Arabia: Does the entrepreneurial education on artificial intelligence matter? *Cogent Business and Management*, *7*(1). https://doi.org/10.1080/23311975.2020.1825041

Nuseir, M. T., El-Refae, G. A., & Aljumah, A. (2021). The e-Learning of Students and University's Brand Image (Post COVID-19): How Successfully Al-Ain University Have Embraced the Paradigm Shift in Digital Learning. In *Studies in Systems, Decision and Control* (Vol. 334, Issue April). Springer International Publishing. https://doi.org/10.1007/978-3-030-67151-8_10

Nuseira, M. T., & Aljumahb, A. (2020). Digital marketing adoption influenced by relative advantage and competitive industry: a UAE tourism case study. *International Journal of Innovation, Creativity and Change, 2020*(11), 617–631.

Sakkthivel, A. M., Ahmed, G., Amponsah, C. T., & Muuka, G. N. (2022). The influence of price and brand on the purchasing intensions of Arab women: an empirical study. *International Journal of Business Innovation and Research*, *28*(2), 141–161. https://doi.org/10.1504/IJBIR.2022.123260

Tariq, E., Alshurideh, M., Akour, I., & Al-Hawary, S. (2022). The effect of digital marketing capabilities on organizational ambidexterity of the information technology sector. *International Journal of Data and Network Science*, *6*(2), 401–408. https://doi.org/10.5267/j.ijdns.2021.12.014

Tariq, E., Alshurideh, M., Akour, I., Al-Hawary, S., & Kurdi, B. Al. (2022). The role of digital marketing, CSR policy and green marketing in brand development. *International Journal of Data and Network Science*, *6*(3), 995–1004.

https://doi.org/10.5267/j.ijdns.2022.1.012

Varma, A. J., Taleb, N., Said, R. A., Ghazal., T. M., Alzoubi, H. M., & Alshurideh, M. (2023). A Roadmap for SMEs to Adopt an AI Based Cyber Threat Intelligence. *Studies in Computational Intelligence*, *2023*(1056), 1903–1926.

Wijaksono, F. A., Pratami, D., & Bay, A. F. (2020). Measurement of risk project maturity using organizational project management maturity model (OPM3): Study case of construction project in bandung. *IOP Conference Series: Materials Science and Engineering*, *852*(1). https://doi.org/10.1088/1757-899X/852/1/012098

Yasir, A., Ahmad, A., Abbas, S., Inairat, M., Al-Kassem, A. H., & Rasool, A. (2022). How Artificial Intelligence Is Promoting Financial Inclusion? A Study On Barriers Of Financial Inclusion. *2022 International Conference on Business Analytics for Technology and Security (ICBATS)*, 1–6. https://doi.org/10.1109/ICBATS54253.2022.9759038

Zahra Naseri, S., Ghaderi, B., & Aliakbari, F. (2021). Challenges and Solutions forImplementation of OPM3 in the Iranian Petrochemical Industry. *Turkish Journal of Computer and Mathematics Education*, *12*(13), 2799–2806.