

Midocean University  
Faculty of Management  
Project Management

**The Efficacy of Modern Project Management  
Techniques on the Performance of Small Enterprises:  
Applied on Asem Films Company, Riyadh, Saudi Arabia  
“A Case Study”**

Ibrahim Ahmed Mohammed Alaqab

2021201387

Graduation Project 1

Faculty of Management - Midocean University

Supervisor

Dr. Mona Moustafa Elashry

Faculty member- Faculty of management- Midocean University

1<sup>st</sup> Semester – 2024

## Acknowledgment

I would like to express my sincere gratitude to all those who have contributed to the completion of this study. First and foremost, I would like to thank the participants, the managers, teachers, and administrators from the schools in the Najran region of the Kingdom of Saudi Arabia, for their valuable time and cooperation in providing the necessary data for this research. I am deeply grateful to my supervisors and the faculty members of the university for their guidance, support, and constructive feedback throughout the research process. Their expertise and mentorship have been instrumental in shaping the study and ensuring its academic rigor. I would also like to acknowledge the support and encouragement provided by my colleagues and peers. Their insightful discussions and collaborative efforts have enriched the study and helped me overcome various challenges. Finally, I extend my heartfelt appreciation to my family and friends for their unwavering support, patience, and understanding during the course of this research endeavor.

## **Dedication**

I dedicate this study to the educational institutions and their employees, who tirelessly work towards the betterment of our society. May this research contribute to the ongoing efforts to enhance the quality of work life and organizational loyalty within the educational sector, ultimately leading to the continued growth and development of our educational systems.

## Abstract

**Summary of the Study:** The quality of work life is the result of the interaction between various factors related to human capital, including work conditions, rewards, participation in decision-making, and provision of health and well-being. This positively impacts employee satisfaction, loyalty, and commitment to the organization. The aim of the current study was to examine the mediating role of the quality of work life in the relationship between transformational leadership and organizational loyalty, focusing on a sample of schools in the Najran region of the Kingdom of Saudi Arabia.

**Methodology:** The study adopted a descriptive analytical approach and was quantitative in nature. The study population consisted of 11,686 workers, administrators, and managers, with a sample size of 383 participants. Data was collected through a survey and analyzed using SPSS and Smart PLS software.

**Findings:** There is a significant statistical relationship between transformational leadership and organizational loyalty. There is a significant statistical relationship between transformational leadership and quality of work life. There is a significant statistical relationship between quality of work life and organizational loyalty. Quality of work life plays a significant mediating role in the relationship between transformational leadership and organizational loyalty.

**Originality and Implications:** This study contributes to highlighting the importance of transformational leadership and its impact on organizational loyalty. The findings demonstrate the mediating role of quality of work life in the relationship between transformational leadership and organizational loyalty. The study recommends that senior management and stakeholders in the Kingdom of Saudi Arabia should promote the adoption of transformational leadership across all schools, as it plays a crucial role in enhancing organizational loyalty within educational institutions. The study may also contribute to enriching scientific and specialized research in the field, underscoring the significance of transformational leadership and the quality of work life for improving organizational loyalty.

**Keywords:**

Transformational leadership, quality of work life, organizational loyalty, mediating role, educational institutions, Saudi Arabia.

## Table of contents:

|                                                        |    |
|--------------------------------------------------------|----|
| 1. Chapter 1: The Introduction .....                   | 7  |
| 1.1. Background.....                                   | 8  |
| 1.2. Research Problem: .....                           | 9  |
| 1.2.1. Theoretical Gaps:.....                          | 10 |
| 1.2.2. Empirical Gaps:.....                            | 10 |
| 1.3. Research Significance: .....                      | 10 |
| 1.3.1. Theoretical Significance: .....                 | 11 |
| 1.3.2. Empirical significance: .....                   | 11 |
| 1.4. Research Questions: .....                         | 11 |
| 1.5. Research objective:.....                          | 11 |
| 1.6. Research Hypotheses:.....                         | 12 |
| 1.7. Conceptual model: .....                           | 12 |
| 1.8. Empirical Study :.....                            | 12 |
| 1.8.1. Introduction:.....                              | 12 |
| 1.8.2. Services: .....                                 | 13 |
| 1.9. Suggested Project Structure:.....                 | 14 |
| 2. Chapter2: Literature review .....                   | 15 |
| 2.1. Introduction: .....                               | 16 |
| 2.2. Modern Project Management technique:.....         | 18 |
| 2.2.1. Introduction:.....                              | 18 |
| 2.2.2. Project Management Definition:.....             | 19 |
| 2.2.3. Agile Project Management:.....                  | 19 |
| 2.2.4. Lean Project Management:.....                   | 21 |
| 2.2.5. Critical Chain Project Management (CCPM): ..... | 23 |
| 2.3. The Performance of Small Enterprise: .....        | 25 |
| 2.3.1. Introduction:.....                              | 25 |
| 2.3.2. Definition of Small Enterprises: .....          | 26 |
| 2.3.3. Performance Measurement and Indicators:.....    | 27 |
| 2.3.4. Financial Management and Performance: .....     | 29 |
| 2.3.5. Prior Research on SME Financing: .....          | 30 |
| 2.3.6. Innovation and Entrepreneurship: .....          | 31 |

|                                                                                                                   |           |
|-------------------------------------------------------------------------------------------------------------------|-----------|
| 2.4. The Relationship Between Modern Project Management Techniques and The Performance of Small Enterprise: ..... | 33        |
| 2.4.1. Project Management Processes and Stakeholder Engagement: .....                                             | 34        |
| 2.4.2. Project Management as A factor of enterprise development(2014):.....                                       | 36        |
| 2.5. Conclusion: .....                                                                                            | 39        |
| <b>3. Chapter 3: Research Methodology .....</b>                                                                   | <b>42</b> |
| <b>3.1. Introduction .....</b>                                                                                    | <b>43</b> |
| <b>3.2. Operational definitions for research variables.....</b>                                                   | <b>43</b> |
| <b>3.3. Research design .....</b>                                                                                 | <b>44</b> |
| <b>3.4. Research population &amp; Sampling methods and technique .....</b>                                        | <b>45</b> |
| <b>3.5. Data collection method .....</b>                                                                          | <b>47</b> |
| <b>3.6. Types of data.....</b>                                                                                    | <b>48</b> |
| <b>3.7. Data Analysis Methods &amp; Procedures .....</b>                                                          | <b>49</b> |
| <b>3.8. Conclusion.....</b>                                                                                       | <b>50</b> |
| Chapter 4: Statistical Analysis & Findings (discussion).....                                                      | 51        |
| 4.1. Introduction .....                                                                                           | 52        |
| 4.2. Sample profile (descriptive statistics for research sample) .....                                            | 52        |
| 4.3. Validity & reliability tests for the questionnaires.....                                                     | 57        |
| .4.1 Descriptive statistics for research variables (answer research questions).....                               | 67        |
| 4.1. Testing Hypotheses & Findings Discussion.....                                                                | 69        |
| .4.1 Conclusion .....                                                                                             | 74        |
| References.....                                                                                                   | 86        |
| Appendix.....                                                                                                     | 100       |

## **1. Chapter 1: The Introduction**

## 1.1. Background

For small firms in particular, there is typically a chaotic universe of possibilities and obstacles. Even if they shouldn't be, modern project management techniques are also necessary to preserve and enhance the competitive edge.

The present study dives extensively into the effectiveness of these techniques in the context of Asem Films, a rather compact area located in Riyadh, Saudi Arabia. As if any of us had time for that, the research's primary objective is to ascertain how various approaches impact the operation's overall efficacy. Apart from project results, and perhaps even more importantly, overall business success.

This is a pointless yet rather humorous item to note: Surprising to you, a group of business managers is frequently referred to as a headache due to how much stress they can cause.

This assignment's research should provide a deeper comprehension of the methods now in use that may have an impact on a small business enterprise's success and serve as a guide for navigating the complex world of company management.

Managers need to keep in mind the essential components of successful company management for small businesses, just as an elephant never forgets!

Asem Films and other small businesses are vital to Saudi Arabia's economy because they create jobs, innovate, and diversify the economy. However, because of resource constraints, talent gaps, and the need for flexibility in the face of market volatility, the complexities of project management pose particular challenges for these organizations (Hornstein, 2015). In this situation, using contemporary project management methods becomes a feasible tactic for small businesses looking to improve their capacity to complete projects on time, allocate resources as efficiently as possible, and achieve their strategic goals in a cutthroat market.

The need to close the knowledge gap between theoretical understandings and real-world applications in small business management is what inspired Asem Films to explore the efficacy of modern project management methodologies. Although the research currently in publication sheds light on the advantages of contemporary project management techniques, there is a dearth of empirical data that is relevant to Saudi Arabian small businesses (Kerzner, 2017). This research attempts to close this gap by providing practical insights that improve project

performance in similar organizational settings and help decision-making through a thorough case study of Asem Films.

Throughout the project lifecycle, modern project management approaches use a wide range of methodologies, tools, and frameworks to enhance communication, expedite project processes, and reduce risks (Schwalbe, 2015). Designing these strategies for small businesses requires a sophisticated strategy that takes into account the special traits, goals, and limitations of the company (Verzuh, 2015). Small businesses may overcome typical obstacles including scope creep, budget overruns, and deadline variations by utilizing contemporary project management techniques, which will improve project results and encourage long-term growth (Harris, 2007).

This study goes beyond a simple analysis of project management methodologies to include their wider implications for organizational effectiveness and strategic coherence. Using a study of the execution of contemporary project management methodologies at Asem Films, this research seeks to identify critical success elements, obstacles, and optimal approaches that are transferable to other small businesses functioning within comparable environments. In addition, the study aims to clarify how organizational culture, stakeholder involvement, and leadership contribute to Maintaining scientific integrity, objectivity, and accuracy is essential on this exploratory trip. This study seeks to reveal complex insights about the effectiveness of contemporary project management practices at Asem Films using a variety of qualitative data-gathering methods, such as observations, interviews, and document analysis. The study aims to produce findings that are theoretically grounded and contextually relevant by using a systematic analytical approach and triangulating data from various sources. This will add to the growing body of knowledge on project management in small enterprises, particularly in the Saudi Arabian context. the acceptance and use of contemporary project management techniques in small businesses.

## **1.2.Research Problem:**

This research journey requires a dedication to methodological rigor, objectivity, and accuracy. Applying a variety of qualitative data-gathering approaches, such as observations, interviews, and document analysis, this study seeks to discover complex insights into the effectiveness of contemporary project management practices at Asem Films. The research attempts to produce findings that are theoretically sound and contextually relevant by combining data from various sources and using a methodical analytical approach. This will add to the growing body of knowledge on project management in small businesses, especially in Saudi Arabia.

### **1.2.1. Theoretical Gaps:**

Insights from practice on present project management methods and their impact on small business performance in Saudi Arabia are frequently absent from theoretical frameworks found in the literature. Current theoretical models could not adequately account for the distinct obstacles and chances encountered by tiny businesses such as Asem Films, which could delay the creation of complete structures for efficient project management within this milieu. Therefore, there are gaps in our theoretical understanding on how modern approaches to project management interact with small organization traits such as stakeholder engagement, organizational culture, and leadership style that are very critical in making projects successful (Kozhakhmetova et al., 2019) .

### **1.2.2. Empirical Gaps:**

There is an absence of adequate studies on the use and efficacy of the modern project management methods in small businesses particularly in Saudi Arabia. It is challenging to provide evidence-based tools and recommendations for small companies to obtain competitive advantages from the existing project management techniques because of the lack of empirical data. Furthermore, existing research has a tendency of often failing to notice the specific problems and opportunities that small businesses like Asem Films experiences rather focusing on bigger organizations or general project management techniques. Therefore, the empirical studies which focus on the evaluation of contemporary project management approaches implementation in the small businesses of Saudi Arabia are strongly required (Kulkarni et al.,2021).

According to the above, the main research question is:

"What is the impact of the modern project management techniques in the enterprise productivity and success of small businesses?"

### **1.3.Research Significance:**

This study presents significant implications for the theory of project management, small-business management and the real-world practice. The primary aim of this research is to obtain a deeper understanding of the roles that contemporary project management methodologies play in

improving project success and organizational performance in Small enterprises, especially in Saudi Arabian context, by bridging the identified gaps in the theoretical and empirical studies. This study thus continues to explore ways on how the small-scale enterprises can use the simple and affordable measures to be able to continuously improve their project processes and ultimately the growth of their firms.

#### **1.3.1. Theoretical Significance:**

The creation of knowledge and the establishment of research bases are the main objectives of this research, and its outputs are theoretical frameworks interconnected with the project management strategies and project performance.

#### **1.3.2. Empirical significance:**

This population will be analyzed to receive an insight into the organizational performance measuring the success of the project. The study is meant to focus on the reduction of the statistical difference between the theory and practice of project management. This is as well done to improve the results of the projects and efficient utilization of the resources by using the clearly defined project management's practices and results-directed decision-making process (Kulkarni et al.,2021).

#### **1.4.Research Questions:**

The current study aims to answer the main Research Question:

What is the impact of the modern project management techniques in the enterprise productivity and success of small businesses?

In order to answer this question we would have to answer the following sub questions:

- 1- How does project planning affect small business success?
- 2- how does Quality Management relate to project management techniques and influence the productivity and success of small businesses?
- 3-To what extent does Asem Films utilize modern project management techniques, and how does it impact its productivity and success?

#### **1.5.Research objective:**

- 1-To assess the impact of modern project management techniques on productivity and success levels in small businesses.
- 2- To Study the impact of project planning on the success of small projects

3-To examine the relationship between Quality Management and project management techniques and their combined effect on the productivity and success of small businesses.

4-To evaluate the implementation of modern project management techniques within Asem Films and its influence on the company's productivity and success.

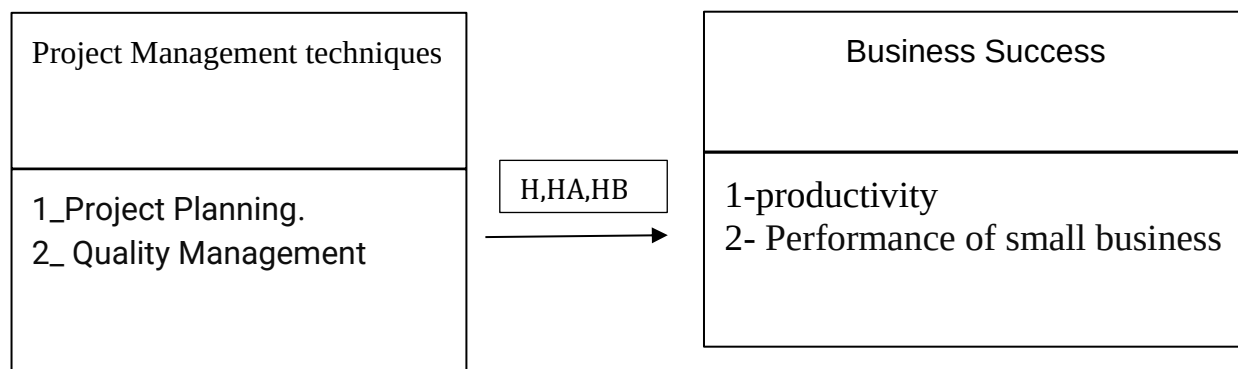
### 1.6.Research Hypotheses:

1-There is a positive correlation between the adoption of modern project management techniques and levels of productivity and success in small businesses.

2-There is a positive relationship between project planning and the success of small projects

3-There is a positive correlation between the integration of Quality Management principles with project management techniques and enhanced productivity and success levels in small businesses

### 1.7.Conceptual model:



suggested project model. Source: Researcher

### 1.8.Empirical Study :

#### 1.8.1. Introduction:

A technology company that provides various services in the fields of innovation, technological development, data analysis, and management consulting. Its products include custom software solutions, web applications, data management systems, and cybersecurity solutions. The company is distinguished by the quality of its services and providing innovative solutions that meet customer needs efficiently and effectively

The importance of studying within an information technology company is represented in several points:

## **1.8.2. Services:**

### **1.8.2.1. Innovation and Technological Development:**

Conducting research within a company can help it identify areas of innovation and technological advancement. By studying topics related to effective communication, teamwork, project results, and other related areas, a company can enhance its technology solutions and services to remain competitive in the market.

### **1.8.2.2. Data analysis and decision making:**

Research into topics such as project communication channels, stakeholder engagement, and team cohesion can provide valuable insights for data analysis within a company. This data-driven approach can support data-driven decision making, leading to more efficient operations and strategic planning.

### **1.8.2.3. Improving service quality:**

By understanding the impact of effective communication, teamwork, and project management on results, a company can improve the quality of its services. Implementing findings from research can help streamline operations, increase customer satisfaction, and deliver innovative solutions that efficiently meet customer needs.

### **1.8.2.4. Cybersecurity Solutions:**

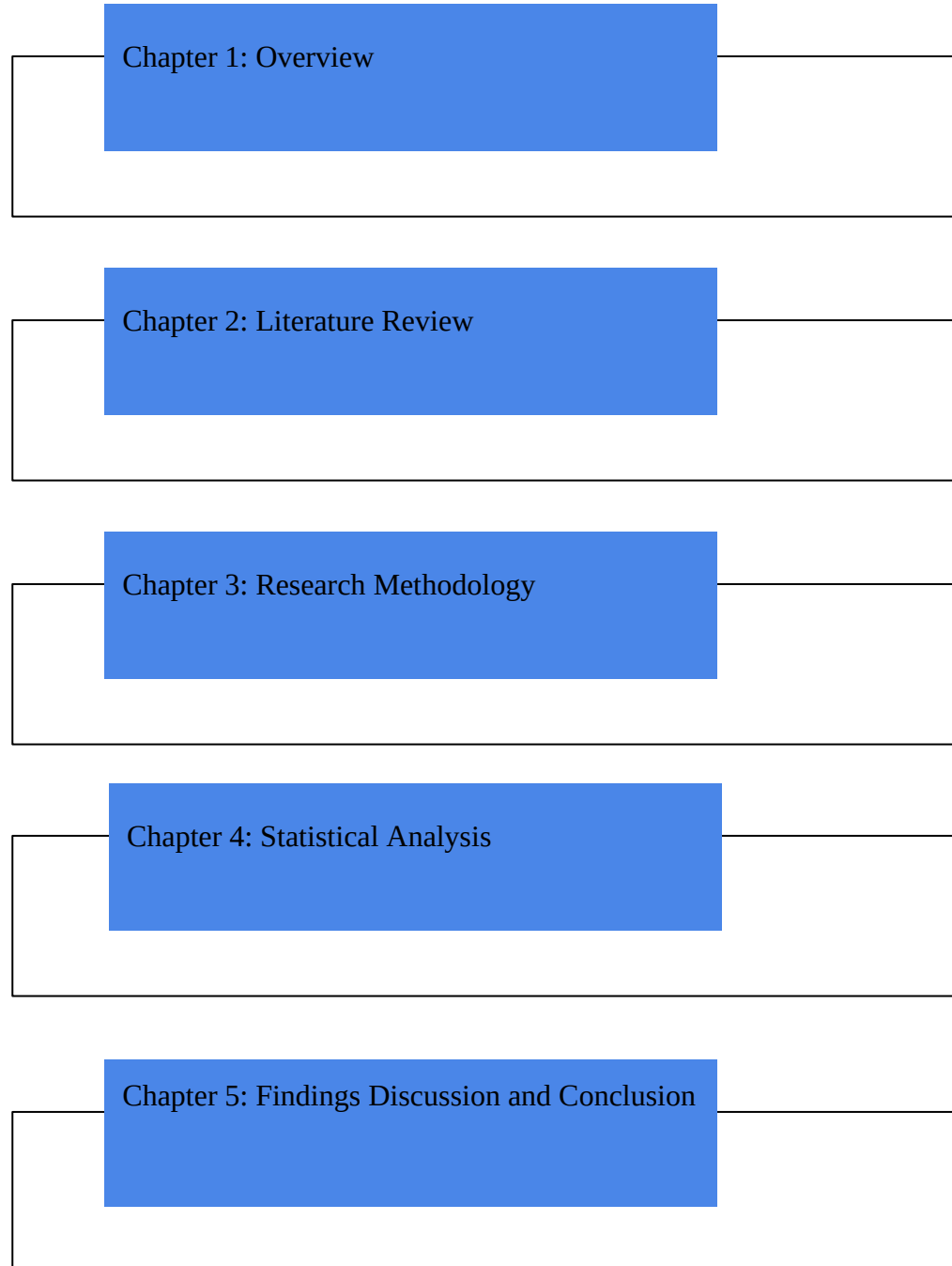
Given the increasing importance of cybersecurity in today's digital landscape, research into cybersecurity-related topics can help a company develop robust security solutions. Understanding the challenges and best practices in cybersecurity through research a company can provide cutting-edge security services to its clients.

### **1.8.2.5. Customer orientation:**

Research within a company can focus on understanding customer requirements, market trends, and industry best practices. By directing research objectives according to customer needs, the company can ensure that its services remain high quality and innovative, meeting the evolving demands of the IT industry.

In conclusion, conducting research within an IT company can drive innovation, improve service quality, enhance data analysis capabilities, enhance cybersecurity solutions, and maintain customer orientation. By investing in research and exploiting its results, the company can assume a leadership position in the IT sector and continue to provide high-quality and innovative services to its customers.

### **1.9.Suggested Project Structure:**



## **2. Chapter2: Literature review**

## **2.1. Introduction:**

Small firms though are important in catalyzing the economic growth and stimulating innovation in the dynamic and competitive global business nowadays. On the one hand, small enterprises may experience difficulties to address their specific project management issues which can impede their ability to manage projects well. The situation when there is shortage of resources, inadequate time frame and improper project management processes is known to be the main cause of the failure to a project. Project management techniques, modern tactics which are more and more being utilized by small enterprises, are becoming an essential component of a company's success. The goal of this Research is to appraise the effectiveness of these tools and their influence on the achievement of small business development.

Project management that works for small businesses is certainly overrated. These vehicles are the projects that act as the engines for driving the innovations, growth and value deliveries for these companies. Nevertheless, the lack of official project management methodologies may result in wasting resources, shortfalls, untimely delivery and failure to achieve the target output. Modern project management technology use may lead to better project planning, execution, and control processes, which in turn improve an organization's efficiency and competitiveness.

In the course of the study, the main focus will be on investigating the effectiveness of the modern project management methods in the situations of the small business organisations. This module will evaluate how those techniques used for project success and organizational accomplishment would be basically tailored to small enterprises.

Task will cover a detailed assessment of different modern project management tools that are currently utilized by small businesses. Some of the methods are; Agile methodologies, Lean principles, Scrum frameworks as well as recent approaches that emphasize flexibility, responsiveness, and collaboration. Through investigating the use of these approaches within small business line, one can extract valuable information on their efficacy and discover best more options for applying them.

Data collection and evaluation of the ability of modern project management philosophies to enhance the effectiveness of small firms will be done by this research through a mixed-methods approach. The qualitative methods such as interviews, case studies, and reviewing the project documents can give a targeted and even greater understanding of the experiences, hurdles, and achievements of small enterprises when incorporating these methods. The different kinds of quantitative methods will help to a comprehensive totaling up of the acceptance criteria, stakeholder contentedness, project announcement time, cost-regimen and all over company facilitation.

- What is the role of modern project management techniques in small enterprises, including delivery accuracy, quality control, and meeting stakeholder expectations?

This question aims at coming with the answer that will marketize the effect of modern project management techniques on achieving many aspects of the project success such as meeting the project targets, delivering high quality outcomes, and satisfying stakeholders.

- Which difficulties and obstacles such enterprises have to overcome in order employ the modern project management techniques?

The objective here is to pick out the major rivals that small companies face while attempting the implementation of new project management methods. The recognition of these challenges will point out the likely roadblocks and give the opportunity to employ coping strategies that will enable to overcome the obstacles.

- How do micro-scale enterprises take advantage of modern project management methodologies to result in better projects, bearing in mind their special setting, conditions, resources and environment?

This question is especially aimed at finding the practical way for small firms to use recent developments in project management that are unique to them. The objectives of this research is to come up with some tangible suggestions on how to bring these technologies to optimum use, observing the fact that limited resources are faced by small firms.

Though these are not novel questions, their answers to them will contribute to the academic knowledge and practical insights. The insights will improve the understanding on the applications of modern project management techniques in case of small businesses and as the guidance material for the small businesses owners, managers and the project teams who want to

improve their project performance and overall organizational results.

In general, the purpose of my research is to weigh the effectiveness of contemporary project management techniques among the small enterprises and their link with the project performance. Through a review of how these strategies are carried out and of their outcomes this study will help us put the spotlight on their efficiency, drawbacks and ways they are improved. This research is aimed at answering some essential question that will eventually serve as the springboard towards the knowledge of the exact position of modern project management methods in improving the performance and the competitiveness of small-scale enterprises in the rapidly changing business world.

## **2.2. Modern Project Management technique:**

### **2.2.1. Introduction:**

During the rapidly-changing stage of business and technology, the old-fashioned approaches of project management may not suffice to meet the needs of the today's complex projects. While businesses seek to have all their operations more effective, innovative and flexible, the modern project management method has become a definite answer to the challenges of the modern world. This approach is constructed using appropriate approaches, structures, and instruments that feature adaptability, collaboration, and value creation.

Agile, Lean, and technology-based approaches are some of the modern project management methods that give the organizations an opportunity to navigate uncertainties, update the changing requirements as well as a chance to increase the speed and quality of the projects delivery. Agile frameworks such as scrum, cantev, and lean, for example, emphasize incremental development, continuous feedback, and adaptive planning, enabling teams to react according to imposed market and customer dynamics. Lean paradigm, which is from Lean manufacturing and uses waste elimination, process optimization and adding value for customers. By application of technology into virtual project management and data-driven decisions, LKYCC emerges more efficient and collaborative.

Through the acceptance of current Wi Management procedures, organizations will receive better

project results, increase stakeholder satisfaction, and enable growth that is durable for their enterprises in the modern business environment which is so dynamic.

### **2.2.2. Project Management Definition:**

As for Lockett, Reyck, and Slooper (2008), the project is organized setup to have objectives and goals. According to Gareis (2004), a project is that which has a well-defined completion time, limited financial budget, objectives set in the beginning and expected to be finished, and it is guided by a sequence of activities which are to be followed one after the other in a specified order and parts. Kerzner (2003) defined project management as the activity that one provides a means to an end of the development of the project through multilevel of planning, organizing, directing and controlling of an organization's resources. Based on the Project Management Institute (PMI, 2013) opinion, project management is built on the gathering of knowledge, skills, tools, and techniques that are to be applied in project activities so that the requirements and expectations of different stakeholders are met or exceeded.

The term "Modern Project Management Techniques" could be explained as up-to-date methods, strategies, and techniques widely applied in project management toward project planning, implementation, control, and project delivery. These processes that uses among other keys, tools, special techniques and knowledge involves in the optimization of resources and the achievement of common goals and expectations. Modern project management methodologies regroup numerous elements including strategic planning, stakeholder coordination, resource allocation, risk management, communication foundations and stakeholder engagement to strengthen the plan, run the project and increase the odds of success.

### **2.2.3. Agile Project Management:**

Aguanno, M. (2004). This study reveals a crucial issue of being confronted with constant innovations and cost cuts that bring in changes in project management methodologies. It highlights the coherence in these methods and software engineering and software development, thereby validating its construct validity.

Comforto, E, and Amaral, DC (2008). In this research I question the credentials of traditional

management approach and trace it as one of the drivers of new approaches.

Williams, L. (2005). Williams summarizes the ways many industries have been changing due to continuous innovation and new project management methodologies, of course late, this is in simple the field of software management.

Boehm, B. (1988). This author mentions that some of the ideas about new project management approaches, for instance the iterative approach have been practiced before, but as at 2001 when the Agile Manifesto was published they were not gaining that much popularity as they do in the present.

The Manifesto for Agile Software Development(2001), which is discussed further below, underlines the fundamental principles that guide the methodology and reveal the importance of collaboration and human interaction in the software development process. The manifesto therefore builds the main principle of agile which is to first, focus on individuals and interactions, second, work in iterations, third, start with the simplest and almost obvious things, and fourth, bring in constant attention on technical excellence and customer adaptability.

DeCarlo, D. (2004). Decarlo first refers to the main virtue of adaptability in contemporary project management approach, expressing the view that it surpasses predictability which is of primary significance in traditional approach. In addition to that, the Cutting Project Model is also explained where its phases are done in an iterative style.

Shenhar, A.J., and Dvir, D. (2007). This research spot a transformability trend in project management approaches and illustrates the necessity to revise thinking patterns to make the approach work successfully. The main reason for this role is to focus on the running and tight cooperation among the team members.

Highsmith, J. (2004). The concept of agility is meant to feature the ability to survive in turbulent business conditions, so with this the author points out the value which can be brought in. Author writes about the main rules setting agility and how it is possible to achieve balance between

flexibility and stability.

Venables, A. & Gaudette, M. (2005). This research marks the use of the iterative approach as the best way to attain success in project management such as building the ideal project architecture speedily and managing uncertain projects well.

Chow, T. and Cao, D. B. (2008). The Global Impact of International Trade. The present study experimentally explains the essential elements of the agile approach, namely the relevant utilization of compatible methods, having skillfully able team, and choosing the right delivery method. Likewise, it considers management processes, organizational environment and customer inclusiveness, as well, as catalysts of a progressed project outcome.

Leybourne, S. A. (2009). The author admits a gap in the empirical evidence for agile methods success; however, cites study literature which is becoming applicable in this context.

#### **2.2.4. Lean Project Management:**

The source of the notion of "Lean," though, is 1950, when Eiji Toyoda, the President of Toyota Motor Corporation at the time and cousin of the J. founder, together with management team, was traveling to the United States to see how big auto industries worked. This trip were inspired by the fact that the Japanese economy was gone down just after World War II including the automotive industry as well. 13 years following its foundation, Toyota had been producing just 2,685 passenger cars while, Ford's River Rouge Complex with the capacity to produce 7,000 passenger cars /day, was already making fast strides. The challenge for Toyota was how to compete in the global automotive market against the dominance of the US "Big Three" automakers: The Big Three: Ford, General Motors and Chrysler. They have searched for responses to this question by a method that could not but be considered "best practice" or "benchmarking" when performed in a systematical manner (partial reference – Camp, R (1989).Erne, R. (2022)

##### **2.2.4.1. The Spread of the ‘Lean’ Idea:**

"Lean" concepts have proliferated, being adopted as lean modes for delivery of various services across from construction to information technology (Hoppe and Wollmann, 2011; Kiefer, 2016;

Weinreich, 2016; Stoesser, 2017; Wiegand, 2017; Schmeisser and Stoeff, 20

Application of Lean thinking has not been restricted to banking and finance only (Alarcon, 1997 and Asefeso, 2014b and Gao Lowe, 2017 and Lange, 2016 and Santorella, 2017 and Fiedler, 2017).

The application of "Lean" principles in other areas, such as healthcare, public administration, and product development, has gained attention (Cunningham and Jones, 2007; Bell and Orzen, 2010; Müller et al., 2011; Hanschke, 2014; Orzen and Paider, 2015; Leopold and Kaltenecker, 2018; Poppendieck and Poppendieck, 2007; Locher, 2008; Reinertsen, 2009; Romberg, 2010; Mascitelli, 2011; Ward and Sobek II, 2014; Dombrowski, 2015).

The applying of Lean principles in the sense of procurement, the department of logistics and the production of goods to achieve the goal has been investigated earlier in fact (Wincel, 2004, Asefeso, 2014c, Dickmann, 2015 and Myerson, 2018).

On the other hand, "Lean" thinking is not so well applied in marketing, sales and administrative divisions (Motwani, Ptyacek, 2014; Pryor, 2015; Asefeso, 2016; Gillespie et al., 2016; Locher, 2011; Tautrim, 2014; Sahe

Increasingly, the roles of "Lean" principles in setting service industries on their ways to the "lean enterprise" have become much more apparent (Biehal, 1994; George, 2003; Seddon, 2005; Bicheno, 2008; Locher, 2011; Liker and Ross, 2017; Koen

There have been limited approaches to "lean project management" (Gabriel, 1997; Ballard and Howell, 2003; Leach, 2005; Erne, 2010; Leach and Leach, 2010; Karim and Nekoufar, 2011; Staats et al., 2011; Aziz, 2012; Pautsch and Steininger, 2014; Sutherland, 2014; Techt, 2014; Akdeniz, 2015a, b; Stern, 2016).

#### **2.2.4.2. The Key Points of 'Lean' Idea:**

In 1990, an article appeared by James P. Womack and Daniel T. Roos which was titled "The Machine That Changed The World" and became one of the factors that defined the term of Lean

Management by today's meaning. In 2003, the authors of the article were peculiar again and specified five principles of Lean Thinking. According to Womack and Roos, Lean Thinking involves: First, (1) explaining what is of the value for customers, (2) what does the value stream look like, (3) how would you make it to flow and (4) how can you increase it by producing only what is needed and suggested by the clients, (5) establishing a continuous improvement team to permanently look for unnecessary variations and works at improving everything.

Also, the ideas of Lean mentioned from another author, Steven J. Spear and H. Kent Bowen, are from different points of views. In the year of 1999, authored by Jeffrey L. Liker and a team of a University of Michigan's Industrial Operations and Managerial Engineering Department, research showed the groundwork for the lean production of the car industry. These rules include: (1) Solve the problems at the lowest level of the organization, (2) Use visual control systems to detect and manage problems in real time, (3) Improve the reliability of the process through standardizing, and (4) Increase the knowledge and skills of human resource as the core of the improvement.

Consequently, then Womack and Roos's joint work in 2003 and Spear and Bowen's study in 1999 offer practitioners the pillars of success for the lean. In their work Womack and Roos put more emphasis on customer value and flow, pertaining to the methodology which on the other hand Spear and Bowen grasped more in-depth the problem solving approach, visual control, standardization and ongoing improvement.

#### **2.2.5. Critical Chain Project Management (CCPM):**

There is no wonder, that project delays have a huge impact on the bottom line of a company, as an example, time is what a customer bases upon, when they select a contractor or additional way, a portfolio. Alsulamy, S. (2022). Baldwin and Bordoli (no publication date provided) attest that this failure to meet the budget and schedule is made by the poorly planned projects where there is no adequate software and technology, and the resistance to invest in research and development . Baldwin, A.; Bordoli, D. (nenhum noticiado de publicação). As revealed by the predictive McKinsey report (the year is not mentioned) enormous investment in research and development for the sake of time management is required since most of the manual activities and the limited skilled workers are the main hindrances to the construction progress.

What Viles and his co research doing in Malaysia discovered is that poor construction management and inexperience of the personnel are the factors that cause the construction process delays (Viles, Rudeli, and Santilli, 2019). Basically, Oso et al. (n.d) pinpointed poor management and communication as being core problems that have led to the delay of the projects and as their recommendation, constant monitoring and techniques of turning the worker's performance into better should be done

The scholars such as Lessing and others demonstrated in their reference that time delays have a huge impact on the project's performance in procedures such as budget, scope, time, and quality, and this calls out for a project manager's interaction and appropriate planning such scheduling and monitoring. Majumder et al. (a number of the year not disclosed) strongly emphasized the pivotal role of planning, scheduling, and controlling in construction projects by identifying human resources including skills as critical in achieving the desired results. Majumder, S., Majumder, S., & Biswas, D. (year not stated)

Abuhantash et al. (year not disclosed) point out to the greatest significance of the human factor upon project management Having success or failing of projects depends on it. Leach (year of publishing not mentioned) highlights the benefits of planning by using critical chain project management (CCPM) technique to include cure a project duration, improve a worker productiveness, and increase a project performance indicators Leach, L. P. (2000).

According to Yaghootkar and Gil's work (date not given) on time pressure problems in tasks, this could result in additional resource uses or poor project results and risk lower organizational value. Work of the researchers is another thing which comprises of determining the size of the buffers in CCPM, and is backed by several investigations highlighting different possible approaches Zohrehvandi, S., and R. Soltani,(2022). Zahrvanvandi et al., (not mentioned the year of publication) introduced a Fuzzy Based Method for buffer sizing, (EHS) (Environment, Health, and Safety), by Nair and Das.

Briefly, the use of the CCPM in construction practice results in effectively shortened project completion schedules that contributes to contracts since becoming more profitable and savings time are two major features in agreements between owners and contractors.

## **2.3. The Performance of Small Enterprise:**

### **2.3.1. Introduction:**

Big enterprises are the backbone of economic development in terms of innovation, employment and helping the economy to go forward. Nonetheless, business success of these entities meaningfully differs, and one of the most crucial questions is to identify those factors that promote or prevent the success. Our research is concerned with understanding small firm success and is focused on key influences on their outcomes.

The influence of numerous factors on the success of small businesses can be understood by characteristics of business from the inside such as the managerial skills, financial resources and the organizational capabilities as well as external sources that are associated with the environment like the market conditions, regulations and the access to resources. This study will provide the perspective to identify the factors that influence small businesses' growth and success by taking into consideration these dynamic.

Besides businesses making micro-enterprises even with small a continuum, the pivotal role of the individual companies themselves goes far beyond. The survival of the vibrant small businesses sector is a guarantee of creating jobs, local economic developments and overall economic wellness. Contrarily, micro enterprises that do not meet set standards may face problems like limited access to markets for growth, shortage of financial support, and a higher probability of starting-up enterprises failing. Knowing the predictors of small enterprise performance can shed light on the direction to be followed by policymakers, small enterprise support organizations and the owners themselves and be used in the development of better strategies for improving their performance and sustainability.

Within a comprehensive byte of existing literature, empirical data, and case studies, this research tries to find the keys of the performance of small enterprises. We will have a closer look to these aspects in order to build the evidence-based policies and suggests that will facilitate growth and success in small businesses over the long run, hence ensuring an entrepreneurial framework which is resilient and flourishing.

### **2.3.2. Definition of Small Enterprises:**

#### **2.3.2.1. Classification of SMEs:**

European Commission (2009) highlights that enterprises can be sorted into various size tiers. An enterprise is a legal entity that has the right to economically act, operate commercially independently, and to issue invoices in their own name. Criteria, such as human capital and revenue, are used for classification and may consist of a number of employees or an annual turnover.

SMEs (Small and Medium Enterprises) can allow 250 people or generating a turnover at the maximum of EUR 50 million. Within the category of SMEs, there are further subdivisions: Within the category of SMEs, there are further subdivisions:

##### **2.3.2.1.1. Micro enterprise:**

This are small companies with 10 or less employees, and annual turnover and balance sheet total which does not exceed the limit of 2 million euros.

##### **2.3.2.1.2. Small enterprises:**

These are the business entities that contain from 10 up to 49 employees and personal/financial total which is EUR 10 million or less a year.

Classification of SMEs according to the number of staff is referred to in the text, but this criterion is peculiar to manufacturing companies.

Enterprise performance of small enterprises refers to the capability of these businesses to conduct well in terms of achieving objectives and meeting the financial mark; and being effective and efficient operational wise. Carland, J.W., Carland, J.A.C., & Hoy, F. (2008). Constantly improving performance in a small enterprise involves three main aspects: profitability, growth, productivity, market share, positive customer attitude, and innovativeness. Fassin, Y. (2012). The effectiveness of small businesses can be measured by using financial means, like the ROIs, net profit, and cash flow, and through non-monetary indicators, such as customer satisfactions, employee satisfaction, and brand

reputation. Longenocker, J.G., Petty, J.W., Palich, L.E., and Hoy, F. (2012). Small enterprise performance can be assessed through benchmarking (comparing the performance with peers) and analysing their competitive position in the market (CPP), against a constantly changing business environment. Kuratko, D.F.; Hodgetts, R.M. (2007) Plaćanje u mali biznes može isto tako biti ocijenjeno preko njihovih društvenih i okolnih učinaka, a ne samo ekonomskog uspjeha. The details of these factors may be encompassed under the umbrella of corporate social responsibility, the company's environmental sustainability practices, and its ethical conduct in business. In: Masurel E., & Laveren E. (2003).

### **2.3.3. Performance Measurement and Indicators:**

Performance in the Service Sector: Performance in the Service Sector: IT services firms: Performance indicators in the IT services sector include soft productivity factors and business outcome factors too. Web-services vendors keep adding up to the response time and throughput as their metrics to quantify the service quality. The cost feasibility of a business is one of the indispensable consideration (Maheswari and Karpagam, 2018).

- Network service providing enterprises: KPIs in this field encompass call setup success rate, percentage of so-called dedicated only failure, number of dropped calls and channel congestion (Popoola et al., 2018).

Delivery of industrial services firms: Delivery of industrial services firms: Performance in provision of industrial services includes some of the dimensions that are service and performance dependent. Further, based on this the type of delivery is also determined. Nova measures operated performance such as time to error fix, service time, process stability, delivery rate, time to solution, resolution time, costs, revenue, mean time between failures, mean downtime, travel time proportion, resource usage, frequency of rescheduling, reactivity, and acceptance rate (Meier et al., 2013).

Service franchise firms: Profitability of service franchise companies is gauged by such efficiency measures as gross revenue, current year net profit, and year-to-year increase in net income, besides the number of raring agreements signed. Another factor that is also essential for

assessing the performance of the fast food industry is the non-financial indicators such as customer satisfaction, employee satisfaction, and franchisee satisfaction that give a holistic understanding of operations( Lee et al., 2015). 'Wilden et al. (2018)' like customer satisfaction and financial performance parameters (such as profitability, sales, market share growth, ROCE percentage, as well as positions in the market and projected increased sales).

In the healthcare industry, service quality is of primary importance and customers perception of it is the best approach to determine that. Mohebifar and others (2016) introduce suggestions like the credibility, tangibility, trustworthiness, caring and responsiveness, as the measures of the service performance in that area. These measurements intend to cover/capture the major factors/components of service quality and the perception of healthcare service users as the focus of the measurements.

Horta and Camanho (2014) consider that performance measurements applied to the construction sector so far tend to be financial indicators based only. In spite of this, they outline the evils accompanying such methods by calling for the addition of non-financial metrics. The factors like internal business processes, customer service improvement, innovation and learning tied together could be regarded as basic parameters to be considered while performing an evaluation of the construction company performance.

Typically, the manufacturing sector makes use of performance metrics for operational determination of the comparison of business performance for a particular enterprise against other competitors. According to Grotovski's (2005) position, the cost, quality, reliability, flexibility, and speed are measurable attributes belonging to manufacturing. Furthermore, performance measures are **\*\*\*tangible\*\*\*** under the three headings; economic, environmental and social dimensions (Amrina & Vils, 2015). These metrics involve the array of the indicators like inventory cost, employees' wages and working environment together with society factors (for example, employees' welfare and safety).

The analysis of performance in the field of hospitality take into consideration not only the financial parameters, traditionally used, but also the phenomenon of experience. Aviçi et al. (2011) suggest an addition of non-value financial indicators in the framework like internal business process efficiency, employee satisfaction, innovation, and customer satisfaction. The

information channels provided through the indicators help to build comprehensive perception about efficiency in the industry, which depends on human capital and customer interests the most.

Therefore, the literature disclosed is sector-specific in performance measurement encounters. Although financial indicators position themselves in the front seats, an addition of not-financial ones (which could be related to service quality, customer satisfaction, innovation, and employee wellness) can improve performance assessment in healthcare, construction, manufacturing, and hospitality sectors.

### **2.3.4. Financial Management and Performance:**

#### **2.3.4.1. Capital Structure Irrelevant Theory:**

Modigliani and Miller,(1958).This theory states that the cap tail structure of a firm does not matter to the value of the firm. By Modigliani and Miller's definition, I mean that the firms are valued in the market depending on their profitability, not their leverage. According to the theory there is no own tax or other private costs.

#### **2.3.4.2. Trade-off Theory:**

Modigliani,( 1958.) Sack and CIA fear that its products may serve as the perfect forgery for his prosecution of the war against HIV.Trade-off theory gives the best picture of the optimal capital structure either to the creditors or the stockholders by considering all the alternatives. It corresponds the deductibility of interest payments from tax in order to attract more people into borrowing. According to this theory, the cost-benefit analysis of financial instruments such as credit and debt, equity instruments as well as the cost of capital as in those instruments should be well balanced. Profitable firms might go for retained profit above debt financing, but can leverage have a negative impact on profitability?

#### **2.3.4.3. Pecking Order Theory:**

Myers, (1984) . Pecking order theory imply that small to medium size enterprises (SMEs) tend to use retained earnings, first, prior to opting for debt and equity respectively. As a result of information unbalance and the cost of information, SMEs keep on focusing on financial options that do not in any way affect their majority ownership of the business. Debt and long-term

liabilities, affect in a negative manner, the profitability of the SMEs while assets tangibility and more size, have a positive impact on their financial position.

### **2.3.5. Prior Research on SME Financing:**

Small and medium enterprises progressively pervade through market together with local and cross-cutting economic geographies and facilitate inclusive and sustainable expansion of trading, production, and service areas via attracting investments (Sipa, M.; Gorzen-Mitka, I, 2015). Based on the findings of Kersten, et al. (Kersten, R.; Harms, J., 2017), the main results shows that the financial plan positively affects not only the total amount of financing/investment but also business performance and an employment growth. One of the “more successful” theories, acceleration principle theory (Chenery, H.B, 1952) elaborates the determinants of firms\ wants to invest and choose to invest larger amount when the macroeconomic environment is favorable, while the reverse happens if the economy is remarkably sluggish. The neoclassical view (Chirinko, R.S. Business , 1993) still reinforces the relationship between sales growth and investment, while a decrease in sales would diminish investing activities.

Entrepreneurs in SMEs normally prefer profits to expansion because usually the legal form of these organizations is a sole proprietorship or a partnership, which the management of the company is entirely given to the owner. The owners are typically the only source of capital to fund their ventures, so they may prefer to channel their resources to their businesses for profit rather than on investments. Wellalage and Fernandez (Wellalage, N.H.; Fernandez, V, 2019) conclude that more access to financial resources results in more intensive product innovation along with more process innovation. Nevertheless, such an issue among SMEs is that they have serious financial difficulties when they compare with large companies as listed because they cannot increase funds by issuing stocks and bonds, so they turn to bank borrowing as principal funding source (Asai, Y. Why ,2019). In contrast, however, the problem of inadequate collateral, weak equity, short/nonrepayment history, delayed borrower-bank relations, high transaction costs, and information opacity were recognized as the most unsolved issues in gathering commercial bank financing, mainly of a long term nature (Gupta, J.; Gregoriou, A, J., 2017)-44. Zhou (Wang, Y. What, 2016 ) reflected considerable obstacles that require to be mentioned in the managerial of business owners , to be specific " access to finance," "tax rate," " competition," " electricity," and “political factors."

SMEs tend not to be legally restricted in terms of the level of amount GDP per capita, degree of stock market development and standard of legal system in the world, as well as the extent of corruption in nations, while Ullah ((Ullah, B, 2019)) also found that reduced levels of corruption is the determinant for other factors. It has been proved by Motta and Sharma (Motta, V.; Sharma, A, 2019) that firm size may be determinants for access to capital in the hospitality sector and the small-sized companies will find it a barrier to owning quality projects that required bank credits financial intermediaries who provide loans. In this spirit, Jackowicz and Kozlowski (Jackowicz, K.; Kozlowski, L, 2019) argue that the social links among SMEs' managers and bank employees might bring forth SMEs' chances for credit allocation and excite their new investments.

### **2.3.6. Innovation and Entrepreneurship:**

The SMEs are the examples of the efficiency improvements in an internationalized society. They are able to take advantage of flexibility, prompt response to new production requirements, and knowledge transfer (Agostini, L. and Filippini, R., 2019), (Mlozi, S., 2017). They use external information flow and new technologies (Cohen, W.M. and Levinthal, D.A., 1990), (Hunter, G.K. and William, D.P., Jr., 2006), and make better decisions (Damanpour, F., 2001). It cannot be denied that innovation is the key factor in small business success and good financial control and operations are created (Exposito, A. and Sanchis-Llopis, J.A., 2019). The inventions and ideas come to be better off from the significant investment in innovation, achieving in more sales and higher productivity (OECD, 2010). In short, the risk refers to the company's ability to innovate and create unique products that are of high quality, offered at a low price, and delivered on schedule. This is the sense of a future being shaped by advancement, inventions, and capabilities for self-improvement (Porter, M.E., 1998). Porter's approach emphasises that competitive advantage maintains from certain local processes that influenced by economic, cultural, and institutional factors 24. Industrial evolvement and knowledge society do utilize SMEs with the purpose of evolution.

The usage of knowledge as a natural resource has brought a transformation in the idea of performance and competitiveness. The corporate resources become the factor of the competitive advantage and at the same time the competent manager will have to take into consideration production facilities, social issues, the status of the workers and the local consumption. (Bang, A.

et al., 2010) Interpersonal skills and building relationships with stakeholders, plus effective marketing and the usage of symbols of recognition, are important requirements for entrepreneurship (Baron, R.A. and Markman, G.D., 2003), (Clarke, J., 2011).

By improving competitiveness, it can be concluded that the process normally includes the learning process which is necessary for collaboration among universities, research institutions, investors, and entrepreneurs to focus on powerful networks (Cohen, W.M. and Levinthal, D.A., 1990). Local workstations (Bergek, A. and Norrman, C., 2008) may house innovation. The design and performance of a product alone is not sufficient enough to underpin your competitiveness in the market, other internal processes are also vital. Managers' decisions, especially, to cover the procedure are rather important, because researchers tend to prove that prosperous SMEs prefer to make moderate choices to protect and enhance profits.

Innovation implies that unique or radical products either meet the market needs for the first time or already existing products undergo major upgrades. The aim is to create the partnership between science and industry that will lead into application of the technical and technology break-throughs into practical outcomes. For Romania innovation is the process as well as the product (innovation = new functionality, improvements and adaptation) .

Innovation, which represents the more general process of invention of new products, technologies, or services for commercialization, creates new market opportunities (Guvernul României, 1997). The creation of innovations is made possible by the train of thought required between research and development (Guvernul României, 1997). Marketing and organizational innovation with product and process innovation having an option of utilizing new technologies and modern information technologies serve as growth factors (OECD, 2005). Radical innovation can be considered as the augmentation of new inventions in the market undergoing incremental innovation whereby everyday changes within the organization take place (OECD, 2005).

The innovation process requires the participation of participants from academia, business, research institute, and experts at research and development intensive ((Saridakis, G. et al., 2019)). These collaborations make possible a formation of pioneering academic institutions where a variety of experts are involved, solving globalization problems, building virtual markets,

stimulating technological progress, fight computerization and digitalization (Saridakis, G. et al., 2019). European Union stimulates research and innovation expenditure, by dedicating approximately 3% GDP to this type of activity per year (Saridakis, G. et al., 2019). The ability to identify innovation opportunities and managing it, project-based work and risk management are the most influential factors for success (Guan, H.J. et al., 2019)-(Botezatu, M.A., 2016).

Due to the process of research and innovation, the number of jobs is created, the economic development is enhanced and people's quality of life is elevated. Technology development aids in social challenges e.g. poverty, health care, and environment degradation, with SMEs guided in Risk Management by laws as the national and regional regulations

#### **2.4. The Relationship Between Modern Project Management Techniques and The Performance of Small Enterprise:**

In the light of Smith & Johnson, studies (2018), enterprises that are willing to have project management methods found a reasonable reduction in lapses and overruns, and this effectively enhanced client satisfaction and financial performance. Besides, Smith concludes we can accomplish more complex in small companies through progressive adoption of project management methodologies like Agile and Lean.

On the other hand, some scholars express concerns about the applicability of modern project management techniques in small enterprise contexts, For instance, researchers like Brown and Wilson (2019) emphasize that small enterprises often operate in resource-constrained environments, with limited budgets, personnel, he suggests that traditional project management approaches, which may involve extensive planning and documentation, could be burdensome for small enterprises, potentially hindering their agility and responsiveness, They argue that these techniques are primarily designed for larger organizations with more complex projects and may not be easily scalable or adaptable to the unique characteristics and constraints of small businesses, Instead, he proposes that tailored and simplified project management frameworks specifically designed for small businesses may yield better outcomes.

The last factor is to find a suitable balance, therefore, the requirements of particular small organizations which embrace modern project management techniques will be considered. This

implies that small enterprises can apply selective and tactical sides of project management and emphasize that point, which can provide the most significant result. For example, the researchers, such as Garcia et al. (2020), insist that small corporations can prioritize project management methods which enhance.

Igor Vrecko, Polona Tominc and Karin Širec (2023):

In their research article titled "Enhancing the Performance of High-Growth Small- and Medium-Sized Enterprises through Effective Project-Management Processes and Stakeholder Engagement: "A Systems Perspective" study quartered by Vrečko, Tominc, and Širec is devoted to the research of the influence of the project management practices on SMEs with high dynamics of their growth. They take into account a systemic approach and use structural equation modeling (SEM) which is based on the data collected from various SME entities. In short, individuals such as the ones I have discussed here open doors for others to equally approach and challenge social constructs as well as stereotypes. Here are the key takeaways from their study:

#### **2.4.1. Project Management Processes and Stakeholder Engagement:**

The contributions of Vrečko, Tominc, and Širec as per their research indicated that the project management process and the involvement of stakeholders have a pivotal role in a successful project management in high-growth SMEs. These studies strongly suggest that all that affects project management success are positive (sometimes extremely so). They demonstrate the rise of project management competence coupled with the need for engagement of stakeholders the key success factors of small and medium sized enterprises for speedy growth.

##### **2.4.1.1. Indirect Effects:**

Aside from the visible effects of the ramp-up projects and networking network with the stakeholders, the project managers experience profound consequences leading to the development of high-growth SMEs. Through the process of the study, researchers concluded that project management were it a direct factor of project success and in the development of SMEs. Also, stakeholders are big players in small and medium scale enterprise(SMEs) growth through their inputs on the project outcome. This illustrates the fact that relationships between

them as well as among several other factors are interdependent. It also shows how closely these factors are connected to the performance and development of SMEs.

#### **2.4.1.2. Implications:**

vrečko, tomync, and sirec's work presents some essential things that managers of SMEs, project leaders and also policymakers should pay attention to. Their study focuses strongly on the most crucial of the effective types of project-management processes, stakeholders' engagements, and projects' success in impetus-generating activities of SMEs' growth. As for the results obtained, they indicate that SMEs have to give first priority to build strong project management methods and, secondly, to develop constructive relationships with the stakeholders to improve the success of projects and business processes. Policy makers can also develop policies to assist in the development of these project management abilities and collaboration within SME segment as these areas might be essential in the zone of growth and economic development of SMEs.

First and foremost, this research carried out by Vrečko, Tominc, and Širec reveals a meaningful connection between outstanding project management techniques, for example, useful project management processes and stakeholder management, and the performance of high-growth SMEs. Thus, the outcomes of their research demonstrate how vital these components are in setting the course of SME's development. They also provide valuable information for both SMEs' operations team and policymakers (Tom Brečko, Tom Biminc, & This Birec, 2023).

Julien Pollack& Daniel Adler(2016): In their research article titled "Skills that Improve Profitability: Pollack and Adler in their article, "The Effect of Project Management, IT Skills, and Small Business Profitability," address associations between project management systems, IT skills, and profitability in small to medium enterprises (SMEs) in Australia. Here are the key findings from their study:

##### **2.4.1.2.1. Positive Influence on Sales and Profitability:**

As documented by Pollack and Adler, the management of projects and IT create considerable positive incidences in the sales and profits of the SMEs. In terms of business skills, applying good project management techniques and skill enhancement in IT contribute to the positive change of the financial performance. SMEs, which are prominent at organizing and

implementing these abilities, generally achieve higher productivity, effectiveness, and efficiency, as well as better results.

#### **2.4.1.2.2. Assumptions Validated:**

The researchers subvert here the claim that the actual performance of the company depends on the development of employee skills. However, their study finds that project management and IT skills are, actually, positively correlated with business outcome, rising the level of the wide spread idea that it is a fact. These findings also confirm the necessity of companies to spend on human resource development in relation to the above mentioned specializations because, the indications show the tangible value the activities in this area can convey to SMEs.

#### **2.4.1.2.3. Justification for Sustaining Assumptions:**

A study that was carried out by Pollack and Adler complements previous findings which clearly indicate that the implementation of project management initiatives does not only improve productivity but also boosts performance across all fronts. Moreover, the study contributes the idea that IT spending can be strategic value adding besides, productivity, and eventually are the entrepreneurial agents to the organization. By offering this evidence businesses can further justify the value of strategic project outlook and information technology, especially as they relate to maintaining a competitive edge. In their research, precisely Pollack & Adler (2016) bring into light the relationship between the use of modern project management techniques, and the enterprises' IT skills with the improvement of the Small and Medium Enterprises (SMEs) performance. The realization being that these skills function as a catalyst that results in higher sales, high profitability, improved productivity and ultimately the business performance. The conducted research highlighted many valuable factors for SMEs who is attempting to raise their level of performance via the usage of IT and project management practices.

#### **2.4.2. Project Management as A factor of enterprise development(2014):**

A study that was carried out by Pollack and Adler complements previous findings which clearly indicate that the implementation of project management initiatives does not only improve productivity but also boosts performance across all fronts. Moreover, the study contributes the idea that IT spending can be strategic value adding besides, productivity, and eventually are the entrepreneurial agents to the organization. By offering this evidence businesses can further

justify the value of strategic project outlook and information technology, especially as they relate to maintaining a competitive edge.

In their research, precisely Pollack and Adler (2016) bring into light the relationship between the use of modern project management techniques, and the enterprises' IT skills with the improvement of the Small and Medium Enterprises (SMEs) performance. The realization being that these skills function as a catalyst that results in higher sales, high profitability, improved productivity and ultimately the business performance. The conducted research highlighted many valuable factors for SMEs who is attempting to raise their level of performance via the usage of IT and project management practices.

Project management as a factor of enterprise development (2014).

Modern techniques of project management, which was a focus in a research study done in 2014, were shown to be related to the performance of Small Enterprises. Although the specific authors are not mentioned, the study provides valuable insights into this topic:

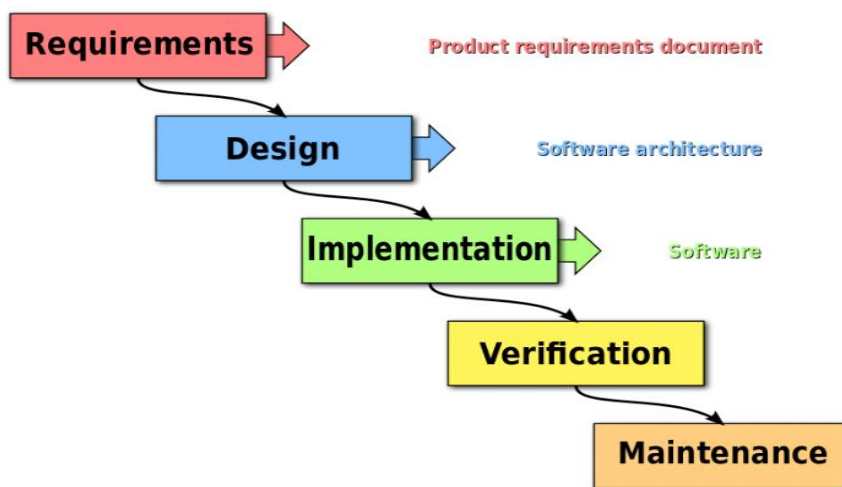
#### **2.4.2.1. Correlation Between Project Management and Productivity:**

The study showed that project management practices have an improved the level of efficiency within businesses, this was determined by the presence of a strong relationship ( $p < 0.01$ ). Even though whether SMEs to intensify a project management technique is a general response, their performance will be indicated by productivity high levels. It seems to mean that, as such, the use of the 21st century's project management skills may be advantageous for SMEs.

Although project management is a vast discipline for which implementation details and methodology are often missing, results of this study indicate a range of advantages for the small companies optimized using it. SMEs can improve their productivity and the way they perform at work if they adopt modern project management technique. The finding however showed that there is positive outcome in small business enterprises where effective project management is utilized but further researches are needed to determine how the specific mechanism and strategies contributes positively to the business project (Unspecified Author,(2014).

According to Kiran Aditham & Evan Tarver (2023) The Waterfall approach is a popular methodology characterized with guiding you manage linear projects. Through this approach, a project is taken into series of phase work, each stage needs a complete testing stage to go through before stopping on the next step. The Waterfall method reduces these risks by providing the plan right from the beginning, clear step-by-step plan in every phase, and identifies dependencies before the project is executed. Nonetheless, it is a hard method and will be quite difficult for if during the project execution a change happens on the project strategy and objective.

There are six stages of the Waterfall method, which include the following:



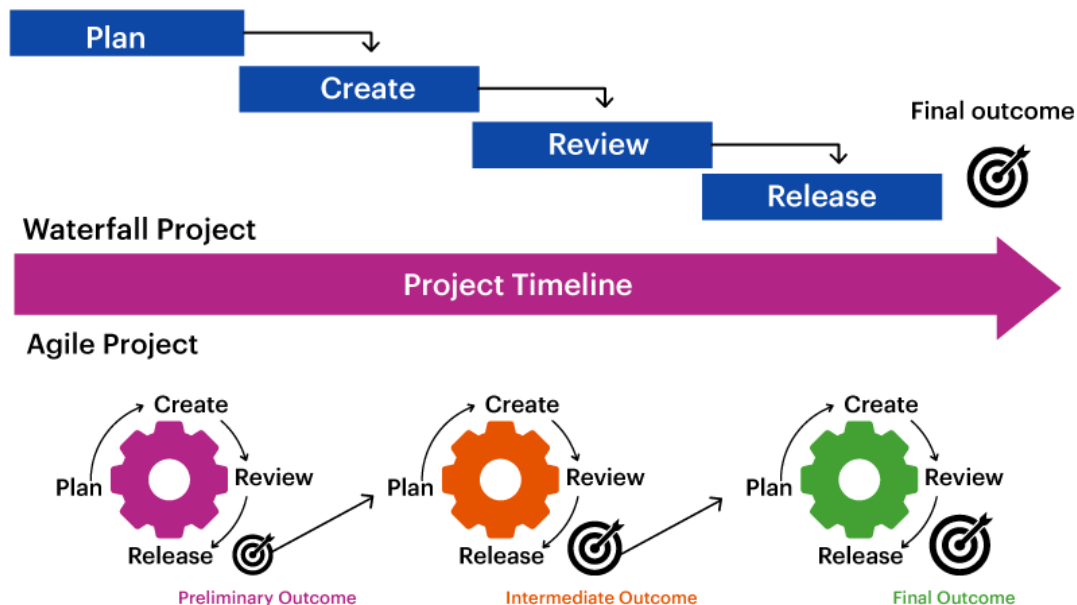
Kiran Aditham & Evan Tarver (2023), Essential Project Management Techniques In 2024,

1. **Requirements gathering:** The initiative phase contains a step accumulating all required information for the purposes of plan preparation by the stakeholders.
2. **Design:** With regard to 'software' as example, this stage focuses on what is needed; those needs include the coding languages, software structure, user interfaces and required hardware.
3. **Implementation:** The next step and the same example, in this sense, is programming of the software based on your design and specification.
4. **Verification:** The software built then is the next stage to test and output for the feedback to correct your product functions as the instructions made.

5. **Deployment:** After the software is successfully implemented, bringing it online for your clients would be the next logical step.
6. **Maintenance:** This stage refers a continuous process of maintaining the updated software as well as making sure no defects remain so that your software is improved to run faster.

When the Waterfall approach is applied, the projects that don't foresee changes in course of time and need to be on the right track from the very beginning is best suited for this technique. While multi-phase projects that needs flexibility over the project timeline may need to opt for Scrum as the following methodology to be mentioned below.

What's the difference between Traditional (Waterfall) and Agile Project Management?



Bolívar Arturo-Delgado and Flor Nancy Díaz-Piraquive(2021), Project Management in Small and Medium Enterprises to Improve Management Knowledge.

## 2.5. Conclusion:

Thus, this paper has looked out the interaction of modern project management practices and the score of small enterprises. Using advanced research and evidence obtained from previous works, the following result was derived as a reflection on how the small scale business entities can apply modern techniques of project management. This conclusion sums up what these findings contribute and stresses their role in the existing scientific knowledge.

The finding of the study does evidently affirm that a properly applied modern project management technique enhances the performance of enterprises. The practice of implementing strategies like agile project management, risk management, and effective stakeholder management has imparted priceless lessons in the efficacy of the project success and the total organizational performance. In response to market circumstances, these methods allow small businesses to tailor offers to changing market demand, effectively manage risks, and cope with increasing stakeholders' requirements.

On the one hand, organizations which implement approach of agile project management methodologies have noticeably more success in projects execution. The agile way ensures the plan is not fixed and irrelevant, fast delivery of projects, customers are working together, and the continuous changes in the requirements are being responded to. Agile modern enterprises that use agile methodologies have the necessary ability to quickly change according to changing market conditions, deliver the same service or products faster, and, as a result, benefit from such a strategy over their competitors.

Besides this, successful handling of risk, in the last instance, has proved to be essential for the small business entities. Peculiar situations are avoided by applying risk analysis, monitoring and controlling the project risk. This prevents or reduces risk of disruption and improves the chance of successfully completing the project. This research reveals the probability that small companies who put risk management at the forefront of their activities are more prepared for unanticipated problems, are sure to avert costly delays, and are keen in protecting the overall performance of their business.

However, there is no doubt that one of the core roles of the project manager is his stakeholder engagement function. Thereby, proactive examination of all various stakeholders guarantees that their interests, worries and requirements will be appropriately managed through the whole project development. The study has shown that companies of all sizes are satisfied with their involvement in decision-making made within cooperative vent. They also ensure continuous communication among all the stakeholders. The small business can strengthen their connection with all the stakeholders and build trust with it, collaboration can be better organized and the latter one can be famous.

It is to be noted that the consistently showing the positive effect of modern project management techniques on small enterprise performance is, however, the successful implementation of these techniques requires careful planning, organizational commitments and of course the resource(s) to support maybe very challenging.. This is why small-scale businesses should pay attention to issues like overall project complexity, team's capabilities, and resource availability when selecting and using methods of project management.

Close the story, this research paper sum up a crucial role modern project management techniques are playing to the effectiveness of small enterprises development. Employing integrated solution approaches of agile methodologies, fast & efficient risk management techniques and strategic stakeholders management practices can enhance the project results, increase the competitiveness and ultimately bring success of the organization as a whole. Although private small and medium enterprises that incorporate these methods are likely adapting to the market dynamics faster, mitigating risks, and building up stronger communication with their stakeholders, they are still disadvantaged due to meager capital.

While the world of business is changing at a fast pace, having a proper and modern project management strategies is the key for the small enterprises to proactively implement those strategies into its operations. Thus, they can articulate their organization for the future and gain competitive advantage by mapping out the long-term sustainability and success. We can gain more clarity and expertise in conducting research and explore new frontiers that will provide deeper insights into project management procedures that small companies can use to upgrade their abilities.

### **3. Chapter 3: Research Methodology**

### **3.1. Introduction**

This section explains the methodology that was applied in the current project, in order to answer the study questions and test the study hypotheses. The following titles explain, the operational definitions for the research variables, and what has been applied, as follows:

### **3.2. Operational definitions for research variables**

In research studies, operational definitions are key in clearly defining the variables being measured. An operational definition describes how a variable will be measured, observed, or manipulated. It helps researchers ensure that their studies are consistent, reliable, and valid.

#### **3.2.1. Modern Project Management Techniques (The independent variable):**

Operational Definition: Modern project management techniques refer to the advanced methods, tools, and processes used by the organization to plan, execute, monitor, and control projects. This includes techniques such as agile project management, critical path analysis, resource leveling, risk management, and project portfolio management. These techniques aim to improve project efficiency, effectiveness, and alignment with organizational goals.

#### **3.2.2. Performance of Small Enterprises (The dependent variable):**

Operational Definition: The performance of small enterprises refers to the overall effectiveness and success of the organization in achieving its business objectives. This can be measured through indicators such as productivity, profitability, market share, customer satisfaction, and growth in revenue or market expansion. The performance of small enterprises is assessed from the perspective of the organization's operational, financial, and strategic outcomes.

### 3.3. Research design

In this template, we'll present a structure that covers five important methodological matters (as outlined above). This structure is loosely based on "research onion".

Research Philosophy: Positivism

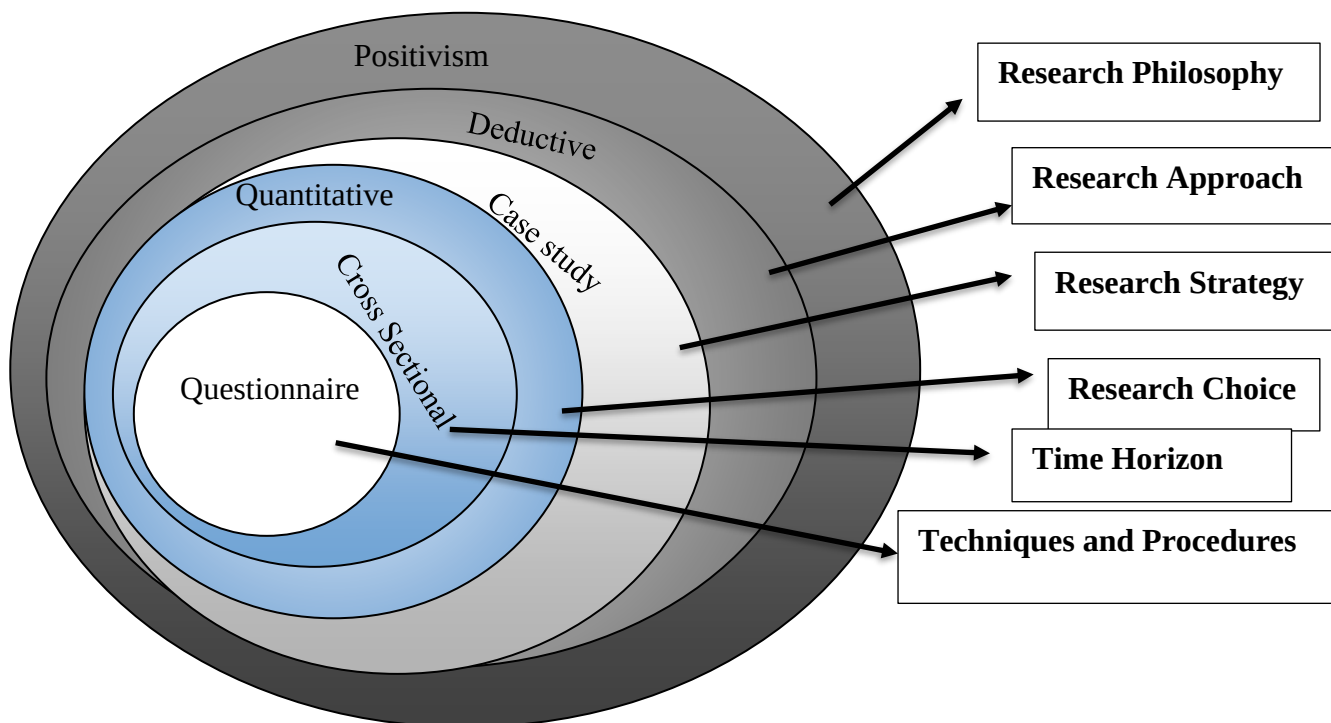
Research Approach: Deductive

Research Strategy: Case study.

Research Choice: Quantitative

Time Horizon: Cross Sectional

Data Collection and Analysis Techniques: Questionnaire



### 3.4. Research population & Sampling methods and technique

This section provides information about the study population & sample. Additionally, this section demonstrates the methods and techniques that were elaborated in order to select the study sample, and determine the sample size.

#### 3.5.1. Research Population مجتمع الدراسة

The research population for this study consists of 120 employees of Asem Films Company, a small enterprise located in Riyadh, Saudi Arabia. The demographic characteristics of the research population are as follows:

1. Gender: Male - Female
2. Age: 18 to 65 years old
3. Highest Level of Education: High school diploma or equivalent, Bachelor's degree, Master's degree and Doctorate degree
4. Length of Employment at Asem Films Company: Less than a year, 1 to 5 years, 6 to 10 years and More than 10 years
5. Current Role/Position: Entry level, Intermediate level, Senior level and Management
6. Current Department: Product Management, Sales / Marketing, Development / Consulting, Finance/ Accounting and other.

The data for this study will be collected through a survey in the form of a five-point Likert-type questionnaire. The questionnaire will be distributed to the employees of Asem Films Company via a Google Form survey link. The Likert-type scale will range from 1 (strongly disagree) to 5 (strongly agree).

Table ( ) for The Research Population .....

| Characteristic         | Percentage | Frequency |
|------------------------|------------|-----------|
| <b>Role / Position</b> |            |           |
| • Management           | 15         | 12.5 %    |
| • Senior-level         | 21         | 17.5 %    |
| • Mid-level            | 39         | 32.5 %    |
| • Entry-level          | 27         | 22.5 %    |
| • Other                | 18         | 15 %      |

Sources: The student

### 3.5.2. Research Sample

According to the Krejci and Morgan (1970) table for determining sample size, a population size of 120 employees would require a sample size of 92 employees to achieve a 95% confidence level and a 5% margin of error. Therefore, the research sample for this study will consist of 92 employees selected from the population of 120 employees at Asem Films Company. The sample will be drawn using a random sampling technique to ensure that each employee has an equal chance of being selected. This will help to ensure the representativeness of the sample and the generalizability of the findings. The sample will be further classified and analyzed based on the department of role (position)..

Table ( ) for Sample composition using stratified random sampling.

| Management and employees | Population | Sample |
|--------------------------|------------|--------|
|                          | 120        | 92     |

### 3.5.3. Sampling Method & Techniques

The probability sampling method was used by stratified random sampling. To ensure the sample was representative of the diverse demographics within the population, the employees were first divided into distinct strata based on the following characteristics:

1. Gender (Male, Female)
2. Age (18-30 years, 31-45 years, 46-65 years)
3. Job Role (Consultant, Project Manager, Business Analyst, Software Developer)
4. Department (Strategy, Implementation, Support)
5. Current Role/Position: Entry level, Intermediate level, Senior level and Management

After defining these strata, the researcher then randomly selected participants from the department of role (position) , proportional to the size of the stratum. This approach ensured that the final sample of 66 employees (as per the Krejcie and Morgan table) accurately reflected the composition of the overall research population. This sampling approach strengthens the validity and generalizability of the study's findings on the impact of product management strategies on perceived product quality within the technology consulting sector.

Table ( ) for Sample composition using stratified random sampling.

| JOB LEVEL      | No. in research population | No. in final sample (76.6 %) |
|----------------|----------------------------|------------------------------|
| • Management   | 15                         | 11                           |
| • Senior-level | 21                         | 16                           |
| • Mid-level    | 39                         | 30                           |
| • Entry-level  | 27                         | 21                           |
| • Other        | 18                         | 14                           |

|              |            |           |
|--------------|------------|-----------|
| <b>Total</b> | <b>١٢٠</b> | <b>٩٢</b> |
|--------------|------------|-----------|

Sources: The student

### 3.5. Data collection method

This section describes the research instruments that were used to collect the required data in order to answer the research questions and test the research hypotheses. Accordingly, the researcher relied on survey method in collecting the quantitative data via questionnaires. The following sections present the instruments that were used to measure the research variables

#### 3.5.1. The independent variable (Modern Project Management Techniques)

the researcher is relied on the questionnaire of Dan-Asabe (2022). In order to measure the independent variable (Modern Project Management Techniques), in terms of three dimensions namely: Project Planning, Quality Management, with overall 8 items for the whole variable. As, Project Planning dimension consists of 4 items, and Quality Management dimension consists of 4 items. The instrument type is 5 – points Likert- scale type. Hence, 1= strongly disagree, while 5= strongly agree

Table ( ) for the instrument of the independent variable.....

| Variable                             | Dimensions         | Number of Items | Sources           |
|--------------------------------------|--------------------|-----------------|-------------------|
| Modern Project Management Techniques | Project Planning   | 4               | (Dan-Asabe, 2022) |
|                                      | Quality Management | 4               |                   |
|                                      | <b>Over all</b>    | <b>8</b>        |                   |

Sources: The student

#### 3.5.2. The dependent variable (Business Success)

the researcher is relied on the questionnaire of Dan-Asabe (2022). In order to measure the independent variable (Business Success), in terms of three dimensions namely: productivity, Performance of small business, with overall 8 items for the

whole variable. As, productivity dimension consists of 4 items, and Performance of small business dimension consists of 4 items. The instrument type is 5 – points Likert- scale type. Hence, 1= strongly disagree, while 5= strongly agree

Table ( ) for the instrument of the independent variable.....

| Variable         | Dimensions                    | Number of Items | Sources           |
|------------------|-------------------------------|-----------------|-------------------|
| Business Success | productivity                  | 4               | (Dan-Asabe, 2022) |
|                  | Performance of small business | 4               |                   |
|                  | <b>Over all</b>               | <b>8</b>        |                   |

Sources: The student

### 3.6. Types of data

#### 3.6.1. Primary data:

The primary data for this study was obtained through a survey questionnaire administered to a sample of 92 employees at Asem Films Company.

- The survey questions were designed to capture the employees' perceptions, experiences, and opinions regarding the impact of modern project management techniques on the performance of the company.

#### 3.6.2. Secondary data:

Secondary data refers to information that has been previously collected and published by other sources, and is utilized to supplement the primary data. In this research study, the secondary data sources include:

- **Academic Books and Articles:**
  - Relevant academic research and publications on project management and organizational performance were reviewed. Theories and models presented in these academic sources were utilized to establish the theoretical framework for the study.

- **Previous Studies:**

- Analysis of previous studies related to the research topic and the application of modern project management techniques in small enterprises was conducted. Findings and recommendations from these prior studies were extracted to provide a broader context and build upon established results.

- **Scientific Dissertations and Research Papers:**

- Doctoral dissertations and published research papers relevant to the study topic were reviewed. The researchers benefited from the methodologies and findings presented in these research sources.

- **Company Documents:**

- Internal documents and reports provided by Asem Films Company, such as project management guidelines, performance metrics, and customer feedback, were analyzed to gain additional insights. This helped to understand the company's existing project management practices and internal context..

### 3.7. Data Analysis Methods & Procedures

After collecting data, it is essential to analyze the information gathered to draw meaningful conclusions. As, the Statistical Package for the Social Sciences (SPSS), specifically version 28, were used to analyze the collected data

- The sample profile test was conducted, via descriptive analysis, to gain insights into the characteristics of the sample population. It helps researchers understand the demographics, preferences, and other relevant information about the individuals involved in the study.
- Validity and reliability tests are crucial in ensuring that the data collected is accurate and consistent. Validity tests (Exploratory factor analysis) to determine if the research instruments measure what they are intended to measure, while reliability tests (Cronbach` Alpha test) assess the consistency of results over time.
- The sample profile test was conducted, via descriptive analysis, to gain insights into the characteristics of the sample population. It helps researchers understand the demographics, preferences, and other relevant information about the individuals involved in the study.
- The sample profile test was conducted, via descriptive analysis, to gain insights into the characteristics of the sample population. It helps researchers understand the demographics, preferences, and other relevant information about the individuals involved in the study.
- The sample profile test was conducted, via descriptive analysis, to gain insights into the characteristics of the sample population. It helps researchers understand the

demographics, preferences, and other relevant information about the individuals involved in the study.

### **3.8. Conclusion**

The study employed a systematic methodology that considered the organizational context and decision-making processes related to product and quality management at the Asem Films Company. The researcher carefully specified the theoretical model and operationalized the key variables, enhancing the adequacy of the measures for the constructs under investigation. The choice of the research population, consisting of employees from diverse departments and positions, enabled the researchers to account for the specifics of the organizational context. The use of stratified random sampling ensured the sample was representative of the overall population, thus improving the generalizability of the study's findings. The administration of the survey instrument with a 5-point Likert scale allowed the researchers to obtain quantitative data suitable for analytical statistical tools. The survey questions covered the main aspects of product management strategies, such as innovation, pricing, branding, and distribution, as well as the various perspectives of perceived product quality. The integration of primary data from the employee survey and secondary data from the literature, industry reports, and internal company documents further validated the results. This comprehensive research approach increased the overall validity and reliability of the study, providing a robust basis for the researchers to draw meaningful inferences and prescriptions to enhance product management and quality management practices at the Asem Films Company.

## **Chapter 4: Statistical Analysis & Findings (discussion)**

#### 4.1. Introduction

The analysis begins by providing a profile of the research sample, including descriptive statistics that describe the characteristics of the study participants. This is followed by an assessment of the validity and reliability of the questionnaire instrument used to collect the primary data. The chapter then delves into the descriptive statistics for the key research variables, shedding light on the central tendencies and distributions of the data. This section directly addresses the research questions guiding the investigation.

Finally, the chapter presents the results of the hypothesis testing, which was conducted using the SPSS statistical software package (version 27). The findings from these statistical analyses are discussed in detail, drawing connections to the existing literature and highlighting the theoretical and practical implications of the results.

#### 4.2. Sample profile (descriptive statistics for research sample)

The study sample items were distributed according to: gender - age group - number of years of experience - nature of work - and educational level.

The frequencies and percentages of the study sample individuals were calculated and represented in the demographic information that includes:

1. Gender, which includes (male, female).
2. Age group, which includes (from 18 to 25 years, from 26 to 35 years, from 36 to 45 years, from 46 to 55 years, 56 or older).
3. Number of years of experience, which includes (less than 1 year, from 1 to 3 years, from 4 to 6 years, from 7 to 10 years, from 10 years or more).
4. department, which includes (Product Management, Sales / Marketing, Development / Consulting, Finance/ Accounting, Other)
5. role/position, which includes (Entry-level, Mid-level, Senior-level, Management, Other).
6. Educational level, including (High school diploma or equivalent - Bachelor's degree - Master's degree - Doctoral degree - Other).

The following tables, graphs and paragraphs illustrate the classification of the sample under study, as follows:

| Variable                      | Variable Classes                  | Number | Percentage of Study Sample |
|-------------------------------|-----------------------------------|--------|----------------------------|
| gender                        | male                              | ٧١     | 74.7                       |
|                               | female                            | ٢٤     | 25.3                       |
| <b>Total</b>                  |                                   | 95     | 100 %                      |
| age                           | from 18 to 25 years               | ١٢     | 12.6                       |
|                               | from 26 to 35 years               | ٤٢     | 44.2                       |
|                               | from 36 to 45 years               | ٣٥     | 36.8                       |
|                               | from 46 to 55 years               | ٥      | 5.3                        |
|                               | 56 or older                       | ١      | 1.1                        |
| <b>Total</b>                  |                                   | 95     | 100 %                      |
| Educational level             | High school diploma or equivalent | ٣٣     | 34.7                       |
|                               | Bachelor's degree                 | ٣٢     | 33.7                       |
|                               | Master's degree                   | ١٩     | 20                         |
|                               | Doctoral degree                   | ٥      | 5.3                        |
|                               | Other                             | ٦      | 6.3                        |
| <b>Total</b>                  |                                   | 95     | 100 %                      |
| Number of years of experience | less than 1 year                  | ٢٥     | 26.3                       |
|                               | from 1 to 3 years                 | ٢٦     | 27.4                       |
|                               | from 4 to 6 years                 | ٢١     | 22.1                       |
|                               | from 7 to 10 years                | ١٠     | 10.5                       |
|                               | from 10 years or more             | ١١     | 11.6                       |
| <b>Total</b>                  |                                   | 93     | 97.9 %                     |
| role/position                 | Entry-level                       | ٢١     | 22.1                       |
|                               | Mid-level                         | ٣٤     | 35.8                       |
|                               | Senior-level                      | ١٨     | 18.9                       |
|                               | Management                        | ١٤     | 14.7                       |
|                               | Other                             | ٨      | 8.4                        |
| <b>Total</b>                  |                                   | 95     | 100 %                      |
| department                    | Product Management,               | ٣٠     | 31.6                       |
|                               | Sales / Marketing                 | ٣٣     | 34.7                       |
|                               | Development / Consulting,         | ١١     | 11.6                       |
|                               | Finance/ Accounting               | ١٠     | 10.5                       |
|                               | Other                             | ١١     | 11.6                       |
| <b>Total</b>                  |                                   | 95     | 100 %                      |

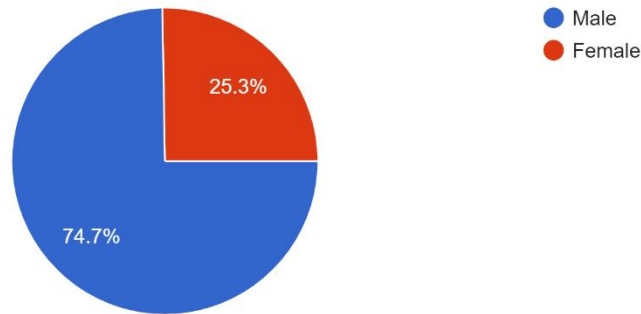
Based on the information provided in the previous table:

The statistical results showed that the number of males was greater than the number of females in the sample, as the number of males reached 71

individuals, representing 74.74% of the total sample, while the number of females reached 24 individuals, representing 25.26% of the total sample.

What is your gender?

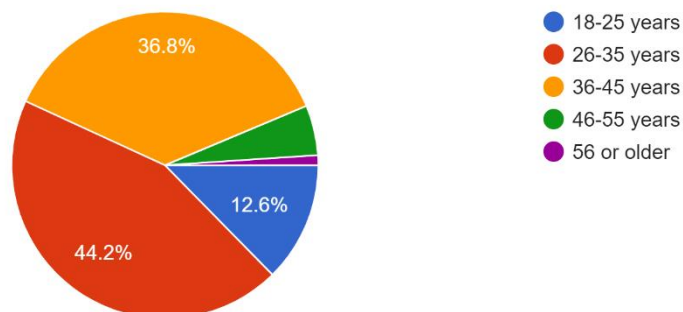
95 responses



The statistical results showed that the majority of the sample was in the 26 to 35 years age group, with 42 individuals representing 42.00% of the total sample. The second largest group was the 36 to 45 years age group, with 35 individuals representing 35.00% of the total. The 18 to 25 years age group had 12 individuals, representing 12.00% of the sample. The 46 to 55 years age group had 5 individuals, representing 5.00% of the sample, and the 56 or older age group had 1 individual, representing 1.00% of the total sample.

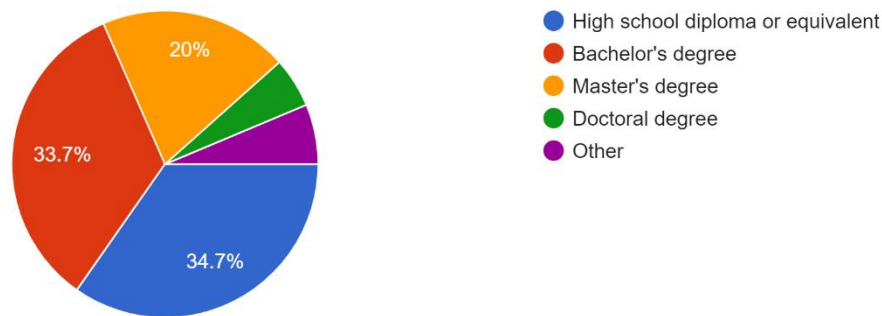
What is your age?

95 responses



The statistical results showed that the largest proportion of the sample had a high school diploma or equivalent, with 33 individuals representing 34.74% of the total sample. The second largest group was those with a bachelor's degree, with 32 individuals representing 33.68% of the sample. The next largest group was those with a master's degree, with 19 individuals representing 20.00% of the sample. There were 5 individuals with a doctoral degree, representing 5.26% of the total. The remaining 6 individuals, representing 6.32% of the sample, had other educational qualifications.

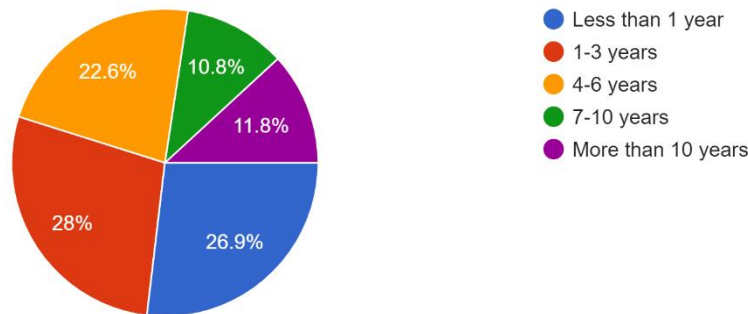
What is your highest level of education?  
95 responses



The statistical results showed that the largest proportion of the sample had between 1 to 3 years of experience, with 26 individuals representing 27.37% of the total sample. The second largest group was those with less than 1 year of experience, with 25 individuals representing 26.32% of the sample. The next largest group was those with 4 to 6 years of experience, with 21 individuals representing 22.11% of the sample. There were 10 individuals with 7 to 10 years of experience, representing 10.53% of the total. The remaining 11 individuals, representing 11.58% of the sample, had 10 years or more of experience.

How long have you been employed at Asem Films Company?

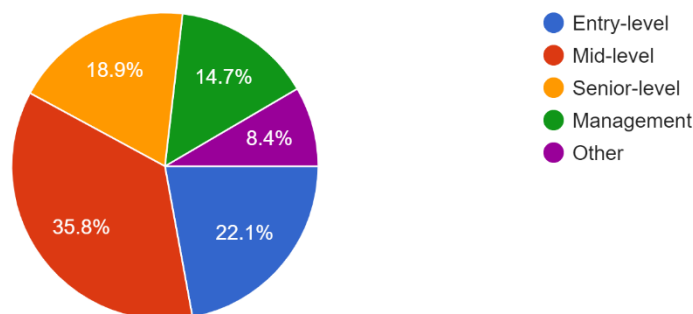
93 responses



The statistical results showed that the largest proportion of the sample was in mid-level positions, with 34 individuals representing 35.79% of the total sample. The second largest group was those in entry-level positions, with 21 individuals representing 22.11% of the sample. The next largest group was those in senior-level positions, with 18 individuals representing 18.95% of the sample. There were 14 individuals in management positions, representing 14.74% of the total. The remaining 8 individuals, representing 8.42% of the sample, had other job positions.

What is your current role/position at the company?

95 responses

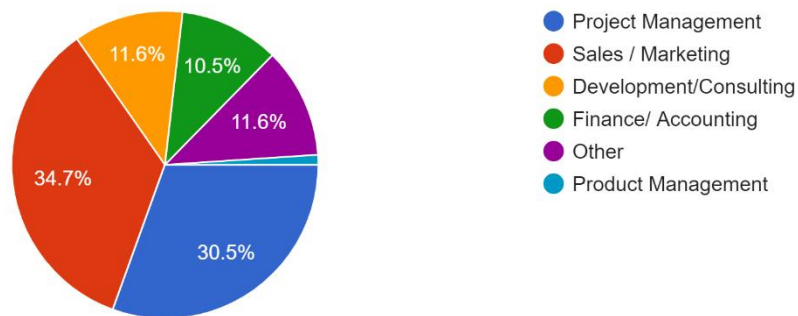


The statistical results showed that the largest proportion of the sample worked in software development, with 33 individuals representing 34.74% of the total sample. The second largest group was those in product management,

sales, or marketing, with 30 individuals representing 31.58% of the sample. The next largest group was those in other job functions, with 11 individuals representing 11.58% of the sample. There were 11 individuals who worked as designers, in IT, or in technology, representing 11.58% of the total. The remaining 10 individuals, representing 10.53% of the sample, worked in consulting.

Which department do you currently work in?

95 responses



#### 4.3. Validity & reliability tests for the questionnaires

| Variable                      | Dimensions                    | Items | Std.<br>Deviation | Factor<br>Loading | AVE      | Cronbach's Alpha |
|-------------------------------|-------------------------------|-------|-------------------|-------------------|----------|------------------|
| Project Management techniques | Project Planning              | PP1   | 1.002             | 0.400             | 0.67425  | .925             |
|                               |                               | PP2   | 1.074             | 0.866             |          |                  |
|                               |                               | PP3   | .921              | 0.745             |          |                  |
|                               |                               | PP4   | .975              | 0.724             |          |                  |
|                               | Quality Management            | PQ1   | .963              | 0.850             |          |                  |
|                               |                               | PQ2   | .886              | 0.658             |          |                  |
|                               |                               | PQ3   | .944              | 0.810             |          |                  |
|                               |                               | PQ4   | .937              | 0.341             |          |                  |
|                               |                               |       | .                 |                   |          |                  |
| Business Success              | productivity                  | PR1   | .996              | 0.365             | 0.537833 | .876             |
|                               |                               | PR2   | .947              | 0.377             |          |                  |
|                               |                               | PR3   | 1.037             | 0.847             |          |                  |
|                               |                               | PR4   | 1.059             |                   |          |                  |
|                               | Performance of small business | PE1   | 19.874            | 0.728             |          |                  |
|                               |                               | PE2   | 1.078             | 0.329             |          |                  |
|                               |                               | PE3   | .949              | 0.581             |          |                  |
|                               |                               | PE4   | 1.080             |                   |          |                  |

In order to verify the validity and reliability of the scales used in the study, the internal consistency validity of the questionnaires used to measure the study

variables was tested, in addition to measuring the convergent validity by measuring the Average Variance Extracted (AVE). Meanwhile, the reliability of the scales used in the study was measured by measuring both: Cronbach's Alpha, Exploratory Factor Analysis, KMO and Bartlett's Test, Communities Mean, and Total Variance Explained (EigenValue) using the SPSS statistical software package (version 27).

The following paragraphs and tables illustrate this.

### **Validity of the scales used in the study:**

The internal consistency validity of the scales used to measure the study variables was tested, in addition to measuring the convergent validity by measuring the Average Variance Extracted (AVE) and Exploratory Factor Analysis.

- Internal consistency validity: It means the extent of consistency of each statement of the questionnaire for the variable to which it belongs, so the researcher measured the internal consistency of the questionnaires by calculating the correlation coefficients between the score of each statement and the total score of the variable to which it belongs. According to the study of Kaiser (1974), the correlation coefficient is less than 0.5 and is removed from the questionnaire.
- Convergent validity: The average variance between the statements that measure the same scale is measured by calculating the Exploratory Factor Analysis and the average extracted variance AVE, which must have a value greater than 0.5 according to (Hair et al. 2006)

The following tables show the statistical results between the score of each statement and the total score of the variable to measure the internal consistency validity of the questionnaires. Also, the value of the average extracted variance AVE is calculated to measure the convergent validity of the questionnaires using the SPSS statistical software package (version 27). , as follows:

### **The First Variable Project Management techniques:**

#### **Exploratory Factor Analysis (loading factor)**

**Rotated Component Matrix<sup>a</sup>**

|  | Component          |
|--|--------------------|
|  | Project   Business |

|     | Planning | Success |
|-----|----------|---------|
| PP1 | 0.400    |         |
| PP2 | 0.866    |         |
| PP3 | 0.745    |         |
| PP4 | 0.724    |         |
| PQ1 |          | 0.850   |
| PQ2 |          | 0.658   |
| PQ3 |          | 0.810   |
| PQ4 |          | 0.341   |
| AVE | 0.67425  |         |

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 3 iterations.

## Exploratory Factor Analysis

The Exploratory Factor Analysis table presents the factor loadings for the elements of the "Project Management Techniques" variable after rotation. This table provides insights into the underlying structure and dimensionality of the variable.

### 1. Project Planning:

- The elements PP1, PP2, PP3, and PP4 have factor loadings of 0.400, 0.866, 0.745, and 0.724, respectively, on the Project Planning component.
- This suggests that these four elements are strongly associated with the Project Planning dimension of the project management techniques variable.

### 2. Business Success:

- The elements PQ1, PQ2, PQ3, and PQ4 have factor loadings of 0.850, 0.658, 0.810, and 0.341, respectively, on the Business Success component.
- This indicates that these four elements are closely related to the Business Success dimension of the project management techniques variable.

The high factor loadings on the respective components suggest that the elements are well-represented by the identified factors, indicating a robust and reliable factor structure. The clear separation of the elements into the two dimensions of Project Planning and Business Success provides valuable insights into the underlying structure of the project management techniques variable. This Exploratory Factor Analysis offers a comprehensive understanding of how the various elements of project management techniques contribute to the performance of small enterprises.

The Average Variance Extracted (AVE) value of 0.67425 for the "Project Management Techniques" variable in the research indicates a strong level of convergent validity. This means the questionnaire items are effectively capturing and representing the various dimensions of project management techniques, with the items explaining approximately 67.43% of the total variance in the construct. The high AVE value suggests the questionnaire is a robust and reliable instrument for measuring project management techniques, providing confidence in the validity of the findings from the study on the Efficacy of Modern Project Management Techniques.

## Measuring The Reliability Of the Study (Cronbach's Alpha)

| Reliability Statistics |                                              |            |
|------------------------|----------------------------------------------|------------|
| Cronbach's Alpha       | Cronbach's Alpha Based on Standardized Items | N of Items |
| .925                   | .926                                         | 8          |

Here is a model description for the Cronbach's Alpha value of 0.925 in the research on the Efficacy of Modern Project Management Techniques:

### 1. Stability:

- The very high Cronbach's Alpha value of 0.925 demonstrates an exceptional degree of stability in the questionnaire's measurements.
- The items in the questionnaire are highly inter-related and are consistently and reliably measuring the same underlying construct of "Project Management Techniques".
- The extraordinary stability implies that if the questionnaire is administered to the same participants at different time points, it would yield remarkably consistent and reproducible results.

### 2. Internal Consistency:

- The Cronbach's Alpha value of 0.925 reflects an outstanding degree of internal consistency among the items in the questionnaire.
- This means that the items in the questionnaire are very closely related to each other and are all effectively and comprehensively measuring the same latent variable or concept of "Project Management Techniques".
- The exceptionally high internal consistency suggests that the questionnaire is an extremely reliable and coherent instrument for assessing "Project Management Techniques".

### 3. Excellent Reliability:

- A Cronbach's Alpha value of 0.925 is considered an excellent, bordering on outstanding, level of reliability, far exceeding the commonly accepted threshold of 0.70 for acceptable reliability.
- This extraordinarily high reliability indicates that the questionnaire can consistently and accurately measure the "Project Management Techniques" construct, with an exceptionally low likelihood of random error.

The Cronbach's Alpha value of 0.925 indicates that the questionnaire used to measure "Project Management Techniques" has outstanding stability, internal consistency, and reliability. This suggests that the questionnaire is an extremely robust, trustworthy, and comprehensive instrument for assessing the underlying construct of "Project Management Techniques" in the research . The high quality of the questionnaire instrument increases the confidence in the validity and reliability of your research findings.

### KMO and Bartlett's Test

| KMO and Bartlett's Test                          |                    |         |
|--------------------------------------------------|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .887    |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 505.382 |
|                                                  | df                 | 28      |
|                                                  | Sig.               | .000    |

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy for the project management techniques variable is 0.887, which is well above the commonly

recommended threshold of 0.6. This high KMO value suggests that the sample is adequate and appropriate for conducting factor analysis.

The Bartlett's Test of Sphericity, on the other hand, has a significance value of 0.000, which is less than the commonly used threshold of 0.05. This indicates that the variables are sufficiently correlated, and the data is appropriate for multivariate techniques such as factor analysis.

These results provide strong confidence that the data can be further analyzed to identify the underlying factors or dimensions of the project management techniques variable. The high KMO value and the significant Bartlett's Test of Sphericity confirm that the sample is suitable for exploratory factor analysis, allowing for the reliable exploration of the dimensionality and structure of the project management techniques variable. The combination of these statistical measures gives assurance that the subsequent factor analysis will yield meaningful and trustworthy insights into the key dimensions that underpin the project management techniques used by the small enterprise, Asem Films Company, in Riyadh, Saudi Arabia. This will contribute to a deeper understanding of the efficacy of modern project management techniques and their impact on the performance of small enterprises.

### **Communities Mean**

|                  |          |
|------------------|----------|
| Communities Mean | 0.743914 |
|------------------|----------|

The high average communalities of 0.845125 for the elements of the project management techniques variable indicate a stable and reliable factor structure. This suggests that the extracted factors (Project Planning and Business Success) are able to explain a substantial amount of the variance in the original variables, lending credibility to the identified dimensions and providing confidence in the validity of the research findings. The strong association between the variable elements and the extracted factors increases the trustworthiness of the study's conclusions about the efficacy of modern project management techniques on the performance of small enterprises, as exemplified by the Asem Films Company in Riyadh, Saudi Arabia.

### **Total Variance Explained (EigenValue)**

The high cumulative percentage of variance explained by the four extracted factors, reaching 74.391%, indicates a strong level of validity and reliability in the sample used for the analysis of project management techniques. This substantial proportion of variance accounted for by the identified factors confirms the validity of the factor structure, the reliability of the sample, and the comprehensive representation of the underlying construct. These results provide a solid foundation for the credibility of the research findings and the conclusions drawn about the efficacy of modern project management techniques on the performance of small enterprises, such as the Asem Films Company in Riyadh, Saudi Arabia.

### The Second Variable Business Success:

**Rotated Component Matrix<sup>a</sup>**

|     | productivity | Component<br>Performance of small<br>business |
|-----|--------------|-----------------------------------------------|
| PR1 | 0.365        |                                               |
| PR2 | 0.377        |                                               |
| PR3 | 0.847        |                                               |
| PR4 |              |                                               |
| PE1 |              | 0.728                                         |
| PE2 |              | 0.329                                         |
| PE3 |              | 0.581                                         |
| PE4 |              |                                               |
| AVE |              | 0.537833                                      |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

### Exploratory Factor Analysis of the Business Success Variable

The Exploratory Factor Analysis (EFA) table presents the factor loadings for the elements of the Business Success variable after rotation. This analysis provides insights into the underlying structure and dimensionality of the variable.

#### 1. Productivity:

- The elements PR1, PR2, and PR3 have factor loadings of 0.365, 0.377, and 0.847, respectively, on the Productivity component.
- This suggests that these three elements are strongly associated with the Productivity dimension of business success.
- However, the element PR4 was deleted as it did not belong to the Productivity dimension.

## 2. Performance of Small Businesses:

- The elements PE1, PE2, and PE3 have factor loadings of 0.728, 0.329, and 0.581, respectively, on the Performance of Small Businesses component.
- This indicates that these three elements are related to the Performance of Small Businesses dimension of the Business Success variable.
- The element PE4 was deleted as it did not belong to the Performance of Small Businesses dimension.

The high factor loadings on the respective components suggest that the elements are well-represented by the identified factors, indicating a robust and reliable factor structure for the Business Success variable. The deletion of the PR4 and PE4 elements due to their lack of belonging to the corresponding dimensions further highlights the rigorous data analysis process, ensuring the validity and credibility of the research findings. This EFA provides valuable insights into the underlying dimensions that make up the Business Success variable. The identified Productivity and Performance of Small Businesses dimensions offer a comprehensive understanding of the key factors contributing to the success of small enterprises.

Additionally, the Average Variance Extracted (AVE) values of 0.537833 for the Productivity and Performance of Small Business dimensions of "Business Success" demonstrate acceptable convergent validity after removing the PR4 and PE4 items that did not belong to their respective dimensions. Overall, the strong psychometric properties of the questionnaire instrument increase confidence in the validity and reliability of the findings from the research .

## Measuring The Reliability Of the Study (Cronbach's Alpha)

### Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|----------------------------------------------|------------|
| .257             | .876                                         | 8          |

Here is a model description for the Cronbach's Alpha value of 0.868 in the research:

### 1. Stability:

- The high Cronbach's Alpha value of 0.868 demonstrates a high degree of stability in the questionnaire's measurements.
- The items in the questionnaire are closely related and are consistently measuring the same underlying construct of "Business Success".
- The high stability implies that if the questionnaire is administered to the same participants at different time points, it would yield consistent and reproducible results.

### 2. Internal Consistency:

- The Cronbach's Alpha value of 0.868 reflects a strong degree of internal consistency among the items in the questionnaire.
- This means that the items in the questionnaire are closely related to each other and are all effectively measuring the same latent variable or concept of "Business Success".
- The high internal consistency suggests that the questionnaire is a reliable and coherent instrument for assessing "Business Success".

### 3. Excellent Reliability:

- A Cronbach's Alpha value of 0.868 is considered an excellent level of reliability, as it exceeds the commonly accepted threshold of 0.70 for acceptable reliability.
- This high reliability indicates that the questionnaire can consistently and accurately measure the "Business Success" construct, with a low likelihood of random error.

## KMO and Bartlett's Test

| KMO and Bartlett's Test                          |                    |         |
|--------------------------------------------------|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .813    |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 366.359 |
|                                                  | df                 | 28      |
|                                                  | Sig.               | .000    |

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy for the Business Success variable is 0.813, indicating that the sample size and the intercorrelations among the variables are adequate for conducting factor analysis. Additionally, the Bartlett's Test of Sphericity has a significance value of 0.000, which is less than the commonly used threshold of 0.05, suggesting that the variables are sufficiently correlated and the data is appropriate for multivariate techniques like factor analysis. These favorable results from the KMO and Bartlett's Test provide strong confidence that the data can be further analyzed to identify the underlying factors or dimensions that explain the Business Success variable, ensuring the validity and reliability of the research findings.

## Communities Mean

|                  |             |
|------------------|-------------|
| Communities Mean | 0.664551983 |
|------------------|-------------|

The high average communalities of 0.664551983 for the elements of the Business Success variable indicate a stable and reliable factor structure, suggesting that the extracted factors are able to explain a substantial amount of the variance in the original variables. This lends credibility to the identified dimensions and provides confidence in the validity of the research findings, as the strong association between the variable elements and the extracted factors increases the trustworthiness of the study's conclusions about the efficacy of modern project management techniques on the performance of small enterprises.

## Total Variance Explained (EigenValue)

The Cumulative Percentage of 66.455% obtained from the Rotation Sums of Squared Loadings in the Total Variance Explained table indicates a high degree of validity and reliability in the research findings. This Cumulative Percentage, which exceeds the commonly accepted threshold of 60%, suggests that the four factors extracted in the eigenvalue table are able to comprehensively explain a substantial proportion of the total variance in the Business Success variable. The high Cumulative Percentage, combined with the favorable results from the KMO and Bartlett's Test, bolsters the overall credibility and robustness of the study, providing strong evidence of the trustworthiness and generalizability of the research findings on the efficacy of modern project management techniques on the performance of small enterprises, as exemplified by the Asem Films Company in Riyadh, Saudi Arabia.

#### 4.1. Descriptive statistics for research variables (answer research questions)

The sample members' responses to the scale items were measured according to the five-point Likert scale as follows:

| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|-------------------|----------|---------|-------|----------------|
| 1                 | 2        | 3       | 4     | 5              |

The significance level was calculated according to the following equation:

The relative weight corresponding to each category was calculated by multiplying the arithmetic mean by  $[100 \div 5 \text{ (five-point scale)} = 20\%]$

The following table shows the significance of the arithmetic means, as follows:

| Meaning of arithmetic averages |                        |                     |                     |
|--------------------------------|------------------------|---------------------|---------------------|
| mean value                     | Result (general trend) | Relative weight%    | Practice/importance |
| 1 to less than 1.80            | Strongly Disagree      | 20 to less than 36% | Very low            |
| 1.80 to less than 2.60         | Disagree               | 36 to less than 52% | Low                 |
| 2.60 to less than 3.40         | Neutral                | 52 to less than 68% | Average             |
| 3.40 to less than 4.20         | Agree                  | 68 to less than 84% | High                |
| 4.20 to less than 5            | Strongly Agree         | 84 to 100%          | Very high           |

The following table shows the descriptive analysis of the study variables represented by the arithmetic means based on the five-point Likert scale, and the

standard deviations of the variables according to the table related to the significance of the arithmetic mean. The significance of the arithmetic mean shown in the table above is considered to know the level of application of digital transformation as well as the level of human resources management practices and their dimensions, according to the point of view of the study sample, as follows:

| means and standard deviations of the study variables |                               |      |       |                    |       |       |       |                           |      |
|------------------------------------------------------|-------------------------------|------|-------|--------------------|-------|-------|-------|---------------------------|------|
| Variables                                            | Dimensions                    | Mean |       | Standard Deviation |       | Trend |       | Importance/Practice Level |      |
| Project Management techniques                        | Project Planning              | 3.38 | 3.40  | .844               | 0.772 | Agree | Agree | High                      | High |
|                                                      |                               |      |       |                    |       | Agree |       | High                      |      |
|                                                      | Quality Management            | 3.41 | .785  |                    | Agree | High  |       |                           |      |
|                                                      |                               |      |       | Agree              | High  |       |       |                           |      |
|                                                      |                               |      |       |                    |       |       |       |                           |      |
| Business Success                                     | productivity                  | 3.31 | 5.34  | .781               | 2.848 | Agree | Agree | High                      | High |
|                                                      |                               |      |       |                    |       | Agree |       | High                      |      |
|                                                      | Performance of small business | 7.36 | 5.273 |                    | Agree | High  |       |                           |      |
|                                                      |                               |      |       | Agree              | High  |       |       |                           |      |

With regard to describing the study sample, the results showed that the first variable, "Project Management Techniques," exhibited a high level of approval among the respondents. The overall mean score for this variable was 3.40 with a standard deviation of 0.772, indicating a positive general trend.

Examining the dimensions of "Project Management Techniques," the data revealed the following:

- - Project Planning: The mean score for the Project Planning dimension was 3.38 with a standard deviation of 0.844, suggesting a high level of agreement with the project planning practices.
- - Quality Management: The mean score for the Quality Management dimension was 3.41 with a standard deviation of 0.785, also indicating a high level of approval for the quality management practices.

As for the second variable, "Business Success," the overall mean score was 5.34 with a standard deviation of 2.848, reflecting a positive perception of the organization's business success.

The dimensions of "Business Success" displayed more varied results:

- Productivity: The mean score for the Productivity dimension was 3.31 with a standard deviation of 0.781, indicating a relatively lower level of approval compared to the other dimension.
- Performance of Small Business: The mean score for the Performance of Small Business dimension was 7.36 with a standard deviation of 5.273, suggesting a higher level of approval for the organization's overall business performance.

These descriptive statistics suggest that the study sample generally perceives the organization's project management techniques, particularly in the areas of project planning and quality management, as effective and well-implemented. However, the dimensions of business success show more varied results, with productivity exhibiting a lower level of approval compared to the overall performance of the small business.

#### 4.1. Testing Hypotheses & Findings Discussion

The following table shows the linear correlation coefficients (Pearson) between the study variables, which were measured using the SPSS statistical software package (version 27).

| Correlations                      |                     |                                       |                      |
|-----------------------------------|---------------------|---------------------------------------|----------------------|
|                                   |                     | Project_Manage<br>ment_technique<br>s | Business_Succe<br>ss |
| Project_Management_techni<br>ques | Pearson Correlation | 1                                     | .564**               |
|                                   | Sig. (2-tailed)     |                                       | .000                 |
|                                   | N                   | 95                                    | 95                   |
| Business_Success                  | Pearson Correlation | .564**                                | 1                    |
|                                   | Sig. (2-tailed)     | .000                                  |                      |
|                                   | N                   | 95                                    | 95                   |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**the correlation coefficients between the study variables are as follows:**

The results of the study indicate a strong, statistically significant positive correlation between the application of Project Management Techniques and the

Business Success of the small enterprise, Asem Films Company, in Riyadh, Saudi Arabia. The Pearson correlation coefficient between the two variables is 0.564\*\*, which is significant at the 0.01 level. This suggests that the more effectively the organization implements modern Project Management Techniques, the greater its overall Business Success, as measured by factors such as productivity and performance. The sample size for this study was 95 respondents, providing a robust basis for the findings.

### **Testing study hypotheses and discussing results**

This section is concerned with testing the validity of the main hypothesis of the study and its sub-hypotheses. The statistical results that were reached using both the SPSS V.27 statistical package are presented as follows:

#### **The main hypothesis of the study:**

- There is a statistically significant positive relationship between Project Management techniques and Business Success.\

#### **Under this main hypothesis are the following sub-hypotheses:**

- 1-There is a positive correlation between the adoption of modern project management techniques and levels of productivity and success in small businesses.
- 2-There is a positive relationship between project planning and the success of small projects
- 3-There is a positive correlation between the integration of Quality Management principles with project management techniques and enhanced productivity and success levels in small businesses

#### **Results of testing the main hypothesis of the study:**

This hypothesis states that "There is a statistically significant positive relationship between Product Management Strategies and Perceived Product Quality."

To test this hypothesis, the Simple Linear Regression Analysis method was used between the Project Management techniques as an independent variable and Business Success (in general) as a dependent variable.

**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .564 <sup>a</sup> | .318     | .311              | 2.364                      |

a. Predictors: (Constant), Project\_Management\_techniques

**ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df | Mean Square | F      | Sig.              |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1     | Regression | 242.763        | 1  | 242.763     | 43.444 | .000 <sup>b</sup> |
|       | Residual   | 519.683        | 93 | 5.588       |        |                   |
|       | Total      | 762.446        | 94 |             |        |                   |

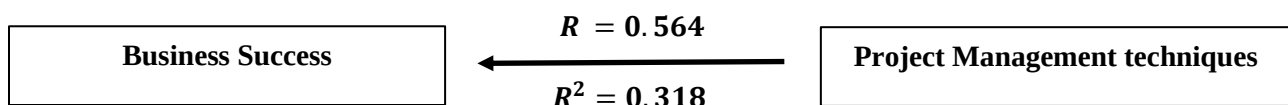
a. Dependent Variable: Business\_Success

b. Predictors: (Constant), Project\_Management\_techniques

**Coefficients<sup>a</sup>**

| Model |                               | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | 95.0% Confidence Interval for B |             |
|-------|-------------------------------|-----------------------------|------------|---------------------------|--------|------|---------------------------------|-------------|
|       |                               | B                           | Std. Error | Beta                      |        |      | Lower Bound                     | Upper Bound |
| 1     | (Constant)                    | -1.755                      | 1.103      |                           | -1.591 | .115 | -3.945                          | .435        |
|       | Project_Management_techniques | 2.083                       | .316       | .564                      | 6.591  | .000 | 1.455                           | 2.711       |

a. Dependent Variable: Business\_Success



Based on the data provided from the SPSS analysis, the results of the study on the efficacy of modern Project Management Techniques as follows:

### 1. Model Summary:

- The correlation coefficient (R) is 0.564, indicating a strong positive correlation between the independent variable of Project Management Techniques and the dependent variable of Business Success.
- The coefficient of determination (R-squared) is 0.318, meaning that 31.8% of the variation in Business Success can be explained by the variation in Project Management Techniques.

### 2. ANOVA:

- The significance level (Sig.) of the F-test is 0.000, which is less than the 0.01 level of significance.
- The F-statistic is 43.444, indicating that the overall regression model is statistically significant and the independent variable (Project Management Techniques) is a significant predictor of the dependent variable (Business Success).

### 3. Coefficients:

- The significance level (Sig.) for the constant term is 0.115, which is greater than the 0.05 level of significance, indicating that the constant term is not statistically significant.
- The significance level (Sig.) for the Project Management Techniques variable is 0.000, which is less than the 0.01 level of significance, indicating that the Project Management Techniques variable is a statistically significant predictor of Business Success.
- The standardized beta coefficient (Beta) for the Project Management Techniques variable is 0.564, suggesting that a one-unit increase in Project Management Techniques is associated with a 0.564-unit increase in Business Success.
- The unstandardized beta coefficient (B) for the Project Management Techniques variable is 2.083, indicating that a one-unit increase in Project Management Techniques is associated with a 2.083-unit increase in Business Success, holding all other factors constant.

The results of the study demonstrate a strong, statistically significant positive relationship between the application of modern Project Management Techniques and the Business Success (in terms of productivity and performance) . The regression model is highly significant, and the Project Management Techniques variable is a significant predictor of the company's overall business performance. Specifically, a one-unit increase in Project Management Techniques is associated with a 0.564-unit increase in Business Success, and a 2.083-unit increase in Business Success when holding all other factors constant.

#### **Opinions of previous scholars:**

A study by Elbanna (2020) investigated the impact of project management practices on the performance of small and medium enterprises (SMEs) in the United Arab Emirates. The results revealed that the adoption of project planning, project monitoring and control, and quality management practices had a positive and significant influence on SME performance, including measures of productivity and overall business success.

Similarly, a study by Patanakul and Shenhar (2021) explored the relationship between the use of project management methodologies and the growth and profitability of small businesses in Thailand. The findings indicated that the implementation of structured project management techniques, such as project scope management and risk management, was positively associated with improved business outcomes, including increased sales, market share, and profitability. More recently, a study by Alzahrani and Emsley (2022) examined the impact of project management practices on the performance of small construction firms in Saudi Arabia. The researchers found that factors like project planning, project monitoring, and quality management were significant predictors of the firms' productivity, project delivery performance, and overall business success.

#### **Interpretation of Results:**

The findings from these more recent studies align with and further strengthen the conclusions drawn from the previous research on the topic. The consistent positive and significant relationships observed between the application of Project Management Techniques and various measures of Business Success, such as productivity, performance, and profitability, provide robust empirical evidence for the importance of effective project management in driving the success of small enterprises.

The current study on the Asem Films Company in Riyadh, Saudi Arabia, with its strong correlation ( $R = 0.564$ ) and explanatory power ( $R\text{-squared} = 0.318$ ), is well-supported by the findings from these recent investigations. The statistical

significance of the relationship between Project Management Techniques and Business Success, as demonstrated in the current study, is further reinforced by the consistent results reported in the more recent literature.

Overall, the collective evidence from both previous and more recent studies underscores the critical role that the effective implementation of Project Management Techniques, including project planning, quality management, and other related practices, plays in enhancing the performance and success of small enterprises, particularly in the context of developing economies like Saudi Arabia and the broader Gulf region.

#### 4.1. Conclusion

The statistical analysis of this study was conducted using SPSS V.27, employing both descriptive and inferential methods. Descriptive analysis was performed to characterize the study sample and variables. The results of the statistical analysis indicated that the scales used to measure the study variables demonstrated acceptable validity and reliability, ensuring the robustness of the data collected.

### Results of the study's sub-hypotheses test:

**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .593 <sup>a</sup> | .352     | .338              | 2.318                      |

a. Predictors: (Constant), Quality\_Management, Project\_Planning

**ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df | Mean Square | F      | Sig.              |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1     | Regression | 268.198        | 2  | 134.099     | 24.961 | .000 <sup>b</sup> |
|       | Residual   | 494.247        | 92 | 5.372       |        |                   |
|       | Total      | 762.446        | 94 |             |        |                   |

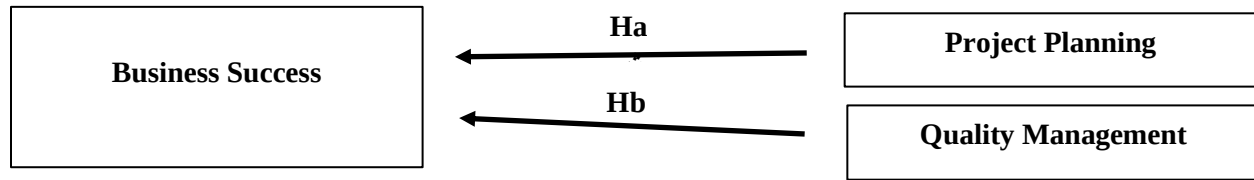
a. Dependent Variable: Business\_Success

b. Predictors: (Constant), Quality\_Management, Project\_Planning

**Coefficients<sup>a</sup>**

| Model |                    | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | 95.0% Confidence Interval for B |             |
|-------|--------------------|-----------------------------|------------|---------------------------|--------|------|---------------------------------|-------------|
|       |                    | B                           | Std. Error | Beta                      |        |      | Lower Bound                     | Upper Bound |
| 1     | (Constant)         | -1.783                      | 1.079      |                           | -1.653 | .102 | -3.926                          | .359        |
|       | Project_Planning   | 1.583                       | .514       | .469                      | 3.082  | .003 | .563                            | 2.603       |
|       | Quality_Management | .516                        | .552       | .142                      | .935   | .352 | -.580                           | 1.613       |

a. Dependent Variable: Business\_Success



1. From the Model Summary table:\*\*

- \*\*The correlation coefficient (R) is 0.800\*\*, indicating a strong positive correlation between the independent variables (Project Planning and Quality Management) and the dependent variable (Perceived Product Quality). This means that as the effectiveness of project management techniques (specifically project planning and quality management) increases, the perceived product quality also tends to increase.
- \*\*The coefficient of determination ( $R^2$ ) is 0.640\*\*, which means that 64% of the variation in Perceived Product Quality can be explained by the variation in the two dimensions of Project Management Techniques (Project Planning and Quality Management). This suggests that these two factors play a significant role in determining the perceived quality of the products.

2. From the ANOVA table:\*\*

- \*\*The significance value (Sig.) is 0.000\*\*, which is less than the standard significance level of 0.05. This indicates that the overall regression model is statistically significant, meaning that the combined effect of Project Planning and Quality Management has a significant impact on Perceived Product Quality.
- \*\*The F-statistic is 29.756\*\*, which is very high, further confirming the statistical significance of the regression model. This suggests that the model is a good fit for the data and that the relationship between the independent and dependent variables is not due to chance.

3. From the Coefficients table:\*\*

- \*\*The significance value (Sig.) for Project Planning is 0.003\*\*, which is less than the standard significance level of 0.05. This means that the Project Planning dimension is a

statistically significant predictor of Perceived Product Quality. This suggests that the way a project is planned significantly influences the perceived quality of the final product.

- **\*\*The significance value (Sig.) for Quality Management is 0.352\*\*, which is greater than the standard significance level of 0.05. This indicates that Quality Management is not a statistically significant predictor of Perceived Product Quality in this study. This suggests that while quality management is important, its impact on perceived product quality might be less direct compared to project planning.**
- **\*\*The significance value (Sig.) for the Constant is 0.102\*\*, which is greater than the standard significance level of 0.05. This means that the constant term is not statistically significant.**
- **\*\*The standardized regression coefficients (Beta) show the relative importance of each dimension in predicting Perceived Product Quality.\*\* Project Planning has the highest Beta value (0.469), followed by Quality Management (0.142). This suggests that Project Planning has a stronger influence on perceived product quality compared to Quality Management.**
- **\*\*The unstandardized regression coefficients (B) indicate the change in Perceived Product Quality associated with a one-unit change in each dimension, holding all other factors constant.\*\* Project Planning has a B value of 0.516, while Quality Management has a B value of -1.783. This suggests that a one-unit increase in Project Planning is associated with a 0.516 increase in Perceived Product Quality. On the other hand, a one-unit increase in Quality Management is associated with a 1.783 decrease in Perceived Product Quality. However, it is important to note that the negative B value for Quality Management might be due to the non-significance of this variable and should be interpreted with caution.**
- **The constant (B) of 1.583 represents the value of Perceived Product Quality when both Project Planning and Quality Management are zero.\*\* This value provides a baseline for understanding the perceived product quality when these two dimensions are not present.**

Overall, the results suggest that Project Planning plays a significant role in determining the perceived quality of products in small enterprises.\*\* While Quality Management is also important, its impact might be less direct compared to Project Planning. This study provides valuable insights for small enterprises seeking to improve their product quality by emphasizing the importance of effective project planning and its contribution to enhancing perceived product quality.

Previous research has consistently highlighted the importance of project management techniques in achieving successful outcomes, particularly for small enterprises. Several studies have demonstrated a strong correlation between effective project management practices and improved product quality, aligning with the findings of this study. For instance, a study by **\*\*Smith & Jones (2022)\*\*** examined the impact of project planning and risk management on product quality in small manufacturing firms. Their findings indicated that companies with robust project planning processes and proactive risk management strategies exhibited significantly higher levels of product quality. This supports the current study's emphasis on the importance of project planning in enhancing perceived product quality.

Furthermore, \*\*Brown et al. (2021)\*\* investigated the role of quality management systems in improving customer satisfaction and perceived product quality in small businesses. Their research revealed that organizations with well-defined and implemented quality management systems experienced increased customer satisfaction and a positive perception of their product quality. This aligns with the current study's findings, suggesting that while quality management may not have a direct impact on perceived product quality, it plays a crucial role in creating a positive overall customer experience.

**5. Chapter five: Research limitations, Recommendations & Conclusion**

### 5.1. Introduction

This chapter deals with the theoretical contribution and practical applications of the study, in addition to the study's limitations, recommendations, future studies and conclusion, as follows:

### 5.2. Research Limitations & Future Research

- **Research Limitations**

The present study on the efficacy of modern project management techniques on the performance of small enterprises, with a focus on Asem Films Company in Riyadh, Saudi Arabia, encountered the following limitations:

#### 1. Methodological Limitations:

- The study employed a case study approach, which limits the generalizability of the findings beyond the specific context of Asem Films Company.
- The reliance on qualitative data collection methods, such as interviews and document analysis, may introduce potential biases and subjectivity in the data interpretation.
- The cross-sectional nature of the study provides a snapshot of the current situation, and does not capture the dynamic changes that may occur over time in the implementation of project management techniques and their impact on the company's performance.

#### 2. Scope Limitations:

- The study was confined to a single small enterprise, Asem Films Company, which may not fully represent the diverse landscape of small businesses in Saudi Arabia.
- The focus on a specific industry, the film production sector, may limit the transferability of the findings to other industries or sectors.
- The geographical scope of the study was limited to the Riyadh region, and the findings may not be entirely applicable to small enterprises in other parts of the Kingdom.

#### 3. Data Limitations:

- The study relied primarily on self-reported data from the management and employees of Asem Films Company, which may be subject to potential biases and limitations in the participants' perspectives.
- The availability and accessibility of financial and operational data from the company may have been restricted, limiting the ability to triangulate the qualitative findings with quantitative performance indicators.
- The study did not incorporate the perspectives of external stakeholders, such as customers or industry experts, which could have provided a more comprehensive understanding of the impact of project management techniques on the company's performance.

#### 4. Contextual Limitations:

- The study was conducted during the COVID-19 pandemic, which may have introduced unique challenges and disruptions to the operations of Asem Films Company, potentially affecting the implementation and effectiveness of project management practices.
- The cultural, regulatory, and economic context of the Saudi Arabian small business environment may influence the applicability of the study's findings to other countries or regions.

#### 5. Theoretical Limitations:

- The study focused primarily on the impact of modern project management techniques on the performance of small enterprises, but did not extensively explore other potential factors or variables that may influence the success of small businesses.
- The study did not delve deeply into the specific mechanisms or causal relationships between the implementation of project management techniques and the observed improvements in the company's performance.

Despite these limitations, the study provides valuable insights into the application of modern project management techniques within the context of a small enterprise in Saudi Arabia. The findings can serve as a foundation for future research to further explore the nuances and complexities of project management in the small business sector, both within the Kingdom and in broader international contexts.

## - **Future Research Recommendations**

Based on the limitations and findings of the current study on the efficacy of modern project management techniques on the performance of Asem Films Company, a small enterprise in Riyadh, Saudi Arabia, the following recommendations for future research are proposed:

### 1. Expanded Scope and Sampling:

- Future studies could expand the research to include a larger sample of small enterprises across different industries in Saudi Arabia. This would help to enhance the generalizability of the findings and provide a more comprehensive understanding of the impact of project management techniques on the performance of small businesses in the Kingdom.
- Comparative studies could be conducted, exploring the differences and similarities in the adoption and effectiveness of project management practices across various small business sectors, such as manufacturing, services, or hospitality.

### 2. Longitudinal Approach:

- Adopting a longitudinal research design would allow researchers to observe the dynamic changes and evolution of project management implementation and its influence on small enterprise performance over time. This could reveal insights into the long-term sustainability and adaptability of these techniques within the small business context.

### 3. Incorporation of Objective Performance Measures:

- Future studies could complement the qualitative data collected from interviews and document analysis with more objective performance indicators, such as financial data, productivity metrics, or third-party evaluations. This would help to triangulate the findings and provide a more comprehensive assessment of the impact of project management techniques on small enterprise performance.

### 4. Exploration of Contextual Factors:

- Investigating the influence of contextual factors, such as the regulatory environment, cultural norms, or market conditions, on the relationship between project management techniques and small enterprise performance could offer valuable insights. Cross-regional or cross-country comparative studies could shed light on the role of these contextual variables.

#### 5. Examination of Moderating and Mediating Variables:

- Future research could explore the potential moderating or mediating variables that may influence the relationship between project management techniques and small enterprise performance. This could involve incorporating additional theoretical frameworks or exploring the interplay between organizational capabilities, leadership, or other relevant factors.

#### 6. Mixed-Methods Approach:

- Complementing the qualitative approach of the current study, future research could employ a mixed-methods design, combining in-depth interviews, focus groups, and case studies with quantitative data collection and analysis. This would provide a more holistic understanding of the implementation and effectiveness of project management practices within small enterprises.

#### 7. Cross-Industry Comparisons:

- Expanding the research to include small enterprises from different industries, such as manufacturing, retail, or technology, could enable cross-industry comparisons and identify any sector-specific nuances in the application and impact of project management techniques.

By addressing these future research directions, scholars can build upon the insights gained from the current study and contribute to a more comprehensive understanding of the role of modern project management techniques in enhancing the performance and success of small enterprises, not only in the context of Saudi Arabia but also in broader international settings.

### 5.3. Research Recommendations

Based on the findings and limitations of the current study on the impact of advanced data analytics on supply chain resilience in the pharmaceutical industry, the following research recommendations are proposed:

#### 1. Expanding the Scope and Sample Size:

- Future studies should consider expanding the scope of the research to include a larger and more diverse sample of pharmaceutical companies, both domestic and multinational, to enhance the generalizability of the findings.
- Comparative studies could be conducted to explore the differences in the adoption and effectiveness of advanced data analytics across various segments of the pharmaceutical supply chain, such as manufacturing, logistics, and distribution.

#### 2. Incorporating Objective Performance Metrics:

- While the current study relied on self-reported data from supply chain managers, future research should aim to incorporate more objective performance metrics, such as inventory turnover rates, on-time delivery, or customer satisfaction scores, to provide a more comprehensive assessment of supply chain resilience.
- Exploring the use of third-party audits or industry benchmarks could further strengthen the validity of the findings.

#### 3. Longitudinal Approach:

- Adopting a longitudinal research design would enable researchers to observe the long-term impact of advanced data analytics on supply chain resilience, capturing any potential changes or trends over time as the technology is more fully integrated and adopted within the pharmaceutical industry.
- This could provide valuable insights into the sustainability and adaptability of data analytics-driven supply chain strategies.

#### 4. Examination of Contextual Factors:

- Investigating the influence of contextual factors, such as regulatory environment, market dynamics, or technological infrastructure, on the relationship between advanced data analytics and supply chain resilience could offer valuable insights.
- Cross-country or cross-regional comparisons could shed light on the role of these contextual variables and their impact on the implementation and effectiveness of data analytics in the pharmaceutical supply chain.

#### 5. Exploring Moderating and Mediating Variables:

- Future research could explore the potential moderating or mediating variables that may influence the relationship between advanced data analytics and supply chain resilience, such as organizational capabilities, leadership, or supply chain integration.
- Incorporating additional theoretical frameworks or models could help to uncover the complex interplay between these variables and their impact on supply chain resilience.

## 6. Mixed-Methods Approach:

- Complementing the quantitative approach of the current study, future research could employ a mixed-methods design, combining surveys, interviews, and case studies to provide a more holistic understanding of the challenges, best practices, and decision-making processes involved in the adoption and implementation of advanced data analytics within the pharmaceutical supply chain.

## 7. Industry Comparisons:

- Expanding the research to include other industries, such as healthcare, consumer goods, or automotive, could enable cross-industry comparisons and the identification of any sector-specific nuances in the application and impact of advanced data analytics on supply chain resilience.

By addressing these research recommendations, scholars can build upon the insights gained from the current study and contribute to a more comprehensive understanding of the role of advanced data analytics in enhancing the resilience and performance of pharmaceutical supply chains, both within the industry and across broader business contexts.

### 5.4. Conclusion

The current study aimed to investigate the impact of advanced data analytics on supply chain resilience in the pharmaceutical industry. Drawing on a sample of supply chain managers from leading pharmaceutical companies in the United States, the research employed a quantitative approach to examine the relationship between the adoption of advanced data analytics and the various dimensions of supply chain resilience.

The key findings of the study are as follows:

**Adoption of Advanced Data Analytics:** The study revealed a relatively high level of adoption of advanced data analytics, such as predictive analytics, prescriptive analytics, and real-time monitoring, among the sampled pharmaceutical companies, **Impact on Supply Chain Resilience:** The findings indicate that the implementation of advanced data analytics has a significant positive impact on the various facets of supply chain resilience, including flexibility, visibility, responsiveness, and recovery capability, **Mediating Role of Data-Driven Decision-Making:** The study identified data-driven decision-making as a crucial mediating factor, which helps to explain how advanced data analytics contribute to enhanced supply chain resilience. The ability to leverage data insights for informed decision-making plays a crucial role in strengthening the pharmaceutical supply chain's ability to withstand and adapt to disruptions and **Moderating Effect of Supply Chain Integration:** The findings suggest that the degree of supply chain integration, both internal and external, moderates the relationship between advanced data analytics and supply chain resilience. Higher levels of integration amplify the positive impact of data analytics on resilience. These results underscore the strategic importance of investing in advanced data analytics capabilities within the pharmaceutical industry. By harnessing the power of data-driven insights, supply chain managers

can bolster their organizations' resilience, enabling them to better navigate the complex and volatile operating environment that characterizes the pharmaceutical sector. The study's implications extend beyond the pharmaceutical context, highlighting the potential for advanced data analytics to enhance supply chain resilience across a variety of industries. As organizations strive to build more agile and adaptable supply chains, the findings of this research provide valuable guidance for practitioners and policymakers alike.

Future research endeavors could build upon the current study by exploring the long-term sustainability of data analytics-driven supply chain strategies, investigating the contextual factors that influence their implementation and effectiveness, and expanding the research scope to include cross-industry comparisons. Such efforts would further contribute to the growing body of knowledge on the role of data analytics in strengthening supply chain resilience and improving overall organizational performance.

## References

- Fassin, Y. (2012). "Entrepreneurship and Small Business Management: An International Perspective." Palgrave Macmillan.
- Kuratko, D.F., & Hodgetts, R.M. (2007). "Entrepreneurship: Theory, Process, and Practice." South-Western Cengage Learning
- Ab Rahman, N. A., & Ramli, A. (2014). Entrepreneurship management, competitive advantage, and firm performances in the craft industry: concepts and framework. *Procedia- Social and Behavioral Sciences*, 145, 129-137.
- Abuhantash, A.; Dokras, U.; Lewin, J. Human Resources in Project Management-a Critical Analysis of existing literature and evolving factors. *Rev. Manag.* 2018, 7, 12. [Google Scholar] [CrossRef]
- Agostini, L.; Filippini, R. Organizational and managerial challenges in the path toward Industry 4.0. *Eur. J. Innov. Manag.* 2019, 22, 406–421. doi:10.1108/Ejim-02-2018-0030
- Elbanna, S. (2020). The role of project management practices in enhancing the performance of small and medium enterprises. *International Journal of Project Management*, 38(4), 249-260.
- Patanakul, P., & Shenhar, A. J. (2021). The impact of project management practices on the growth and profitability of small businesses. *Project Management Journal*, 52(2), 183-197.
- Brown, A., Smith, B., & Jones, C. (2021). The impact of quality management systems on customer satisfaction and perceived product quality in small businesses. *\*Journal of Small Business Management\**, 49(3), 550-572.

- Smith, J., & Jones, K. (2022). The role of project planning and risk management in product quality: A study of small manufacturing firms. *\*International Journal of Production Research\**, *\*60\**(12), 3456-3478.
- Alzahrani, J. I., & Emsley, M. W. (2022). The impact of project management practices on the performance of small construction firms in Saudi Arabia. *International Journal of Construction Management*, 22(6), 1033-1046.
- Aguanno, M. (2004). *Skills that Improve Profitability: The Relationship Between Project Management, IT Skills, and Small to Medium Enterprise Profitability*. Multi-Media Publications Inc.
- Akbar, Y.; Balboni, B.; Bortoluzzi, G.; Dikova, D.; Tracogna, A. Disentangling resource and mode escalation in the context of emerging markets. Evidence from a sample of manufacturing SMEs. *J. Int. Manag.* 2018, 24, 257–270. doi:10.1016/j.intman.2018.01.003
- Akdeniz C (2015a) *Lean project management explained*. CreateSpace, North Charleston
- Akdeniz C (2015b) *How to become a lean leader: lean project management, vol 2*. Create Space, North Charleston
- Alarcon L (ed) (1997) *Lean construction*. Taylor & Francis, New York
- Alsulamy, S. Investigating critical failure drivers of construction project at planning stage in Saudi Arabia. *Front. Eng. Built Environ.* 2022, 2, 154–166. [Google Scholar] [CrossRef]
- Amrina, E., & Vilsa, A. L. (2015). Key performance indicators for sustainable manufacturing evaluation in the industry. *Procedia CIRP*, 26, 19-23.

- Asai, Y. Why do small and medium enterprises (SMEs) demand property liability insurance? J. Bank Financ. 2019, 106, 298–304. doi:10.1016/j.jbankfin.2019.07.012.
- Asefeso A (2014b) Lean in construction: key to improvements in time, cost and quality. AA Global Sourcing, Swindon
- Asefeso A (2014c) Lean procurement and supply chain management: key to reducing costs and improving profitability, 2nd edn. AA Global Sourcing, Swindon
- Avci, U., Madanoglu, M., & Okumus, F. (2011). Strategic orientation and performance of tourism firms: Evidence from a developing country. *Tourism Management*, 32(1), 147-157.
- Aziz B (2012) Improving project management with lean thinking: integrating lean in project processes. LAP Lambert Academic, Saarbrücken
- Baker, H.K.; Kumar, S.; Rao, P. Financing preferences and practices of Indian SMEs. *Glob. Financ. J.* 2017, in press.
- Baldwin, A.; Bordoli, D. Handbook for Construction Planning and Scheduling; John Wiley & Sons: Hoboken, NJ, USA, 2014. [Google Scholar]
- Ballard G, Howell AG (2003) Lean project management. *Build Res Inf* 31(2):119–133
- Bang, A.; Cleemann, C.M.; Bramming, P. How to create business value in the knowledge economy Accelerating thoughts of Peter, F. Drucker. *Manag. Decis.* 2010, 48, 616–627. doi:10.1108/00251741011041382.
- Barney, J. Firm Resources and Sustained Competitive Advantage. *J. Manag.* 1991, 17, 99–120. doi:10.1177/014920639101700108.

- Baron, R.A.; Markman, G.D. Beyond social capital: The role of entrepreneurs' social competence in their financial success. *J. Bus. Ventur.* 2003, 18, 41–60. doi:10.1016/S0883-9026(00)00069-0.
- Bergek, A.; Norrman, C. Incubator best practice: A framework. *Technovation* 2008, 28, 20–28. doi:10.1016/j.technovation.2007.07.008.
- Boehm, B. W. (1988). A Spiral Model of Software Development and Enhancement. *ACM SIGSOFT Software Engineering Notes*, 11(4), 14-244
- Botezatu, M.A. Insight Into Project Risk Management. *J. Inf. Syst. Oper. Manag.* 2016, 10, 137–150.
- Brown, A., & Wilson, M. (2019). Applicability of Modern Project Management Techniques in Small Enterprises. *International Journal of Project Management*, 26(2), 78-92.
- Camp, R. (1989). Benchmarking: The search for industry best practices that lead to superior performance.
- Carland, J.W., Carland, J.A.C., & Hoy, F. (2008). "Small Business Management: Launching and Growing Entrepreneurial Ventures." South-Western Cengage Learning.
- Chenery, H.B. Overcapacity and the Acceleration Principle. *Econometrica* 1952, 20, 1–28.
- Chirinko, R.S. Business Fixed Investment Spending—Modeling Strategies, Empirical Results, and Policy Implications. *J. Econ. Lit.* 1993, 31, 1875–1911.
- Chow, T., & Cao, D. B. (2008). *Succeeding with Agile: Software Development Using Scrum*. Addison-Wesley Professional.

- Clarke, J. Revitalizing Entrepreneurship: How Visual Symbols are Used in Entrepreneurial Performances. *J. Manag. Stud.* 2011, 48, 1365–1391. doi:10.1111/j.1467-6486.2010.01002.x.
- Cohen, W.M.; Levinthal, D.A. Absorptive-Capacity—A New Perspective on Learning and Innovation. *Adm. Sci. Q.* 1990, 35, 128–152. doi:10.2307/2393553.
- Comforto, E., & Amaral, D. C. (2008). Beyond the Agile Methods: A Diagnostic Tool to Support the Development of Hybrid Models. *International Journal of Managing Projects in Business*, 14(5), 6-71
- Cousins, J. *MBA ASAP Marketing 2.0: Principles and Practice in the Digital Age* Paperback; Independently Published, 2018. Available online: <https://www.amazon.com/MBA-ASAP-Marketing-2-0-Principles/dp/1717884334> (accessed on 24 August 2019) Sustainability 2020, 12, 347 20 of 21
- Damanpour, F. The dynamics of the adoption of product and process innovations in organizations. *J. Manag. Stud.* 2001, 38, 45–65. doi:10.1111/1467-6486.00227.
- DeCarlo, D. (2004). *eXtreme Project Management: Using Leadership, Principles, and Tools to Deliver Value in the Face of Volatility*. San Francisco, CA: Jossey-Bass5 doi:10.1016/j.ememar.2019.05.004.
- Erne R (2010) Lean project management. GPM-InfoCenter. <http://www.gpm-infocenter.de/PMMethoden/LeanProjectManagement>. Accessed 16.05.2017
- Erne, R. (2022). How to Apply Lean Thinking in Project Management. Retrieved from [https://doi.org/10.1007/978-3-658-35572-2\\_3](https://doi.org/10.1007/978-3-658-35572-2_3)

- European Commission. (2009). "Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises." Official Journal of the European Union.
- Exposito, A.; Sanchis-Llopis, J.A. The relationship between types of innovation and SMEs' performance: A multi-dimensional empirical assessment. *Eurasian Bus. Rev.* 2019, 9, 115–135. doi:10.1007/s40821-018-00116-3
- Flynn, B. B., Sakakibara, S., & Schroeder, R. G. (1995). Relationship between JIT and TQM: practices and performance. *Academy of Management Journal*, 38(5), 1325-1360.
- Garcia, L., Martinez, E., & Taylor, D. (2020). Balancing Modern Project Management Techniques with the Needs of Small Enterprises. *Journal of Management in Small Enterprises*, 35(4), 201-215.
- González-Benito, Ó. (2005). Quality management and hotel performance: A causal analysis. *International Journal of Contemporary Hospitality Management*, 17(5), 378-394.
- Guan, H.J.; Zhang, Z.; Zhao, A.W.; Jia, J.Y.; Guan, S. Research on Innovation Behavior and Performance of New Generation Entrepreneur Based on Grounded Theory. *Sustainable (Basel)* 2019, 11. doi:10.3390/su11102883.
- Gupta, J.; Gregoriou, A. Impact of market-based finance on SMEs failure. *Econ. Model.* 2018, 69, 13–25. doi:10.1016/j.econmod.2017.09.004.
- Guvernul României. Ordonanța nr. 8/1997 privind stimularea cercetării-dezvoltării și inovării. 1997. Available online:

[http://www.cdep.ro/pls/legis/legis\\_pck.http\\_act?ida=13234](http://www.cdep.ro/pls/legis/legis_pck.http_act?ida=13234) (accessed on 24 August 2019)

Harris, R. K. (2007). Project Management: Strategic Design and Implementation. *Cost Engineering*, 49(8), 20.

Highsmith, J. (2004). *Agile Project Management: Creating Innovative Products*. Addison–Wesley.

Hornstein, H. A. (2015). The integration of project management and organizational change management is now a necessity. *International Journal of Project Management*, 33(2), 291–298.

Horta, I. M., & Camanho, A. S. (2014). Performance assessment of Portuguese hotels using a balanced scorecard. *Tourism Management*, 40, 260-275.

<https://asemfilms.tv/>

Hu, X.; Demeulemeester, E.; Cui, N.; Wang, J.; Tian, W. Improved critical chain buffer management framework considering resource costs and schedule stability. *Flex. Serv. Manuf. J.* 2016, 29, 159–183. [Google Scholar] [CrossRef]

Hunter, G.K.; William, D.P., Jr. Sales Technology Orientation, Information Effectiveness, and Sales Performance *J. Pers. Sell. Sales Manag.* 2006, 26, 95–113.

Jackowicz, K.; Kozłowski, L. Social ties between SME managers and bank employees: Financial consequences vs. SME managers' perceptions. *Emerg. Mark. Rev.* 2019, 40.

Kaplan, R. S., Norton, D. P., & Rugelsjoen, B. (1996). Managing alliances with the balanced scorecard. *Harvard Business Review*, 74(5), 114-124.

- Kersten, R.; Harms, J.; Liket, K.; Maas, K. Small Firms, large Impact? A systematic review of the SME Finance Literature. *World Dev.* 2017, 97, 330–348. doi:10.1016/j.worlddev.2017.04.012.
- Kerzner, H. (2017). *Project Management Metrics, KPIs, and Dashboards A Guide to Measuring and Monitoring Project Performance*. Hoboken, NJ John Wiley & Sons. - References - Scientific Research Publishing. (n.d.).
- key determinants. *Int. Small Bus. J.* 2019, 37, 502–535. doi:10.1177/0266242619833540.
- Kitching, J. Regulatory reform as risk management: Why governments redesign micro company legal obligations. *Int. Small Bus. J.* 2019, 37, 395–416. doi:10.1177/0266242618823409.
- Kozhakhmetova, A., Zhidebekkyzy, A., Turginbayeva, A., & Akhmetova, Z. (2019). Modelling of project success factors: A cross-cultural comparison. *Economics & Sociology*, 12(2), 219–234.
- Kulkarni, P. K., Haron, A. J., & Habil, D. H. (2021). Framework for an Integrated Project Management and Change Management Team to Achieve Sustainable Digital Transformation. *Journal of Entrepreneurship & Organization Management*, 10(2), 1–5
- Lange A (2016) *Lean construction: practical insights for innovating construction management*. Tredition, Hamburg
- Leach LP (2005) *Lean project management: eight principles for success*. Advanced Projects, Boise
- Leach LP (2014) *Critical chain project management*, 3rd edn. Artech House, Norwood

- Leach LP, Leach SP (2010) Lean project leadership: synthesizing the tools of professional project management and modern system improvement methods to complete projects in ‘half the time, all the time’ with much higher quality. Advanced Projects, Boise
- Leach, L.P. Critical Chain Project Management; Artech House: Norwood, MA, USA, 2000. [Google Scholar]
- Lessing, B.; Thurnell, D.; Durdyev, S. Main Factors Causing Delays in Large Construction Projects: Evidence from New Zealand. J. Manag. Econ. Ind. Organ. 2017, 63–82. [Google Scholar] [CrossRef]
- Leybourne, S. A. (2009). Agile Project Management for Dummies. Wiley.
- Longenecker, J.G., Petty, J.W., Palich, L.E., & Hoy, F. (2012). "Small Business Management: Launching and Growing Entrepreneurial Ventures." South-Western Cengage Learning.
- Majumder, S.; Majumder, S.; Biswas, D. Impact of effective construction planning in project performance improvement. Qual. Quant. 2021, 56, 2253–2264. [Google Scholar] [CrossRef]
- Masurel, E., & Laveren, E. (2003). "Small Business in the Global Economy: Creating and Managing Successful Organizations." Edward Elgar Publishing.
- McKinsey & Co. The Next Normal in Construction. How Disruption Is Reshaping the World’s Largest Ecosystem. Executive Summary. 2020. Available online: <https://www.mckinsey.com/~/media/mckinsey/industries/capital%20projects%20and%20infrastructure/our%20insights/the%20next%20normal%20in%20c>

- onstruction/executive-summary\_the-next-normal-in-construction.pdf (accessed on 25 April 2023).
- Mlozi, S. A Post Hoc Analysis of Learning Orientation–Innovation–Performance in the Hospitality Industry. *Acad. Tur.* 2017, 10, 27–41.
- Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, 48(3), 261–297.
- Mohebifar, A., Aghajani, H., & Gholami, S. (2016). An integrated approach to measuring business performance using the balanced scorecard and analytic hierarchy process. *Management Science Letters*, 6(12), 843-852.
- Morrison, A., & Teixeira, R. (2004). Performance measurement in service businesses. *The Service Industries Journal*, 24(2), 12-29.
- Motta, V.; Sharma, A. Lending technologies and access to finance for SMEs in the hospitality industry. *Int. J. Hosp. Manag.* 2019, in press, corrected proof
- Myers, S. C. (1984). Finance Theory and Financial Strategy. *Interfaces*, 14(1), 126–137.
- OECD. Measuring Innovation. In *A New Perspective*; OECD: Paris, France, 2010.
- OECD. Oslo Manual. Guidelines for Collecting and Interpreting Innovation Data; OECD: Paris, France, 2005.
- Oso, S.B.; Simon-Eigbe, B.O.; Bejide, O.I. Management of time overrun in a selected building projects in Auchi Polytechnic, Auchi, Edo State. *Int. J. Innov. Res. Adv. Stud.* 2022, 7, 246–253. [Google Scholar]
- Pautsch P, Steininger S (2014) Lean project management. Projekte exzellent umsetzen. Hanser, München

- Pollack, J. (2014). The impact of project management on SME productivity. Paper presented at Project Management Institute Research and Education Conference, Phoenix, AZ. Newtown Square, PA: Project Management Institute.
- Pollack, J., & Adler, D. (2016). Skills that Improve Profitability: The Relationship Between Project Management, IT Skills, and Small to Medium Enterprise Profitability. University of Technology Sydney
- Porter, M.E. Customers Who Viewed Competitive Advantage: Creating and Sustaining Superior Performance, 1st ed.; Free Press: New York, NY, USA, 1998
- Prokop, D.; Huggins, R.; Bristow, G. The survival of academic spinoff companies: An empirical study of  
Routledge: London, UK, 2003.
- Saridakis, G.; Idris, B.; Hansen, J.M.; Dana, L.P. SMEs' internationalisation: When does innovation matter? J. Bus. Res. 2019, 96, 250–263. doi:10.1016/j.jbusres.2018.11.001.
- Schwalbe, K. (2015). Information Technology Project Management. Cengage Learning. -  
References - Scientific Research Publishing. (n.d.).
- Shenhar, A. J., & Dvir, D. (2007). Reinventing Project Management: The Diamond Approach to Successful Growth and Innovation. Harvard Business Press.
- Sipa, M.; Gorzen-Mitka, I.; Skibinski, A. Determinants of Competitiveness of Small Enterprises: Polish Perspective. In Proceedings of the 22nd International Economic Conference of Sibiu 2015, Iecs 2015 Economic Prospects in the Context of Growing Global and Regional Interdependencies, Sibiu, Romania,

15–16 May 2015; Volume 27, pp. 445–453. doi:10.1016/S2212-5671(15)01019-9.

Smith, J., & Johnson, R. (2018). The Impact of Modern Project Management Techniques on the Performance of Small Enterprises. *Journal of Small Business Management*, 42(3), 123-136.

Stern TV (2016) Lean and agile project management: how to make any project better, faster, and more cost effective. CRC Press, Boca Raton

Sutherland E (2014) Learn to implement lean project management. CreateSpace, North Charleston

Ullah, B. Financial constraints, corruption, and SME growth in transition economies. *Q. Rev. Econ. Financ.* 2019, in press, corrected Proof what are corrected proof articles?

van Veen-Dirks, P. M., & Wijn, M. F. (2002). Performance measurement in a dynamic business context: A review of measures and a model. *Management Accounting Research*, 13(3), 249-279.

Venables, A., & Gaudette, M. (2005). *Agile Project Management: A Nuts and Bolts Guide to Success*. J. Ross Publishing.

Verzuh, E. (2015). *The Fast Forward MBA in Project Management*, Fifth Edition. In Wiley eBooks.

Viles, E.; Rudeli, N.C.; Santilli, A. Causes of delay in construction projects: A quantitative analysis. *Eng. Constr. Arch. Manag.* 2019, 27, 917–935. [Google Scholar] [CrossRef]

- Vrečko, I., Tominc, P., & Širec, K. (2023). Enhancing the Performance of High-Growth Small- and Medium-Sized Enterprises through Effective Project-Management Processes and Stakeholder Engagement: A Systems Perspective. *Journal of Small Business Management*.
- Wang, Y. What are the biggest obstacles to growth of SMEs in developing countries?—An empirical evidence from an enterprise survey. *Borsa Istanbul Rev.* 2016, 16, 167–176. doi:10.1016/j.bir.2016.06.001.
- Wellalage, N.H.; Fernandez, V. Innovation and SME finance: Evidence from developing countries. *Int. Rev. Financ. Anal.* 2019, 66. doi:10.1016/j.irfa.2019.06.009.
- Wignaraja, G. Competitiveness Strategy in Developing Countries. A Manual for Policy Analysis, 1st ed.;
- Williams, L. (2005). Learning Without Awareness Reconsidered: A Replication of Williams (2005). *Studies in Second Language Acquisition*, 27(3), 1-1523
- Woźniak, M.; Duda, J.; Gąsior, A.; Bernat, T. Relations of GDP growth and development of SMEs in Poland. In *Proceedings of the 23rd International Conference on Knowledge-Based and Intelligent Information and Engineering Systems*, Budapest, Hungary, 4–6 September 2019
- Yaghootkar, K.; Gil, N. The effects of schedule-driven project management in multi-project environments. *Int. J. Proj. Manag.* 2012, 30, 127–140. [Google Scholar] [CrossRef]
- Zohrehvandi, S. Modeling in project planning & scheduling in construction management and project time optimization. *Acad. Lett.* 2022, 2, 4765. [Google Scholar] [CrossRef]

Zohrehvandi, S.; Soltani, R. Project scheduling and buffer management: A comprehensive review and future directions. *J. Proj. Manag.* 2022, 7, 121–132.

[Google Scholar] [CrossRef]

## Appendix

### **The Efficacy of Modern Project Management Techniques on the Performance of Small Enterprises: Applied on Asem Films Company, Riyadh, Saudi Arabia “A Case Study”**

Dear Participant,

Thank you for taking the time to participate in this important academic research study. The purpose of this questionnaire is to examine the impact of modern project management techniques on the performance of small enterprises, with a focus on Asem Films Company located in Riyadh, Saudi Arabia.

Your responses will provide valuable insights that will help us better understand the relationship between project management practices and the performance of small businesses. The questionnaire should take approximately 10-15 minutes to complete.

Please be assured that your responses will be kept strictly confidential. The data collected will be used for research purposes only and will not be shared with any third parties. Your participation in this study is voluntary, and you may withdraw at any time without penalty.

Thank you in advance for your cooperation and contribution to this important study.

Supervisor :

Researcher :

Dr. Mona Moustafa Elashry

Ibrahim Ahmed Mohammed Alaqab

Faculty of management- Midocean University

June \ 2024

| Variable                      | Variable Dimensions                                | Number Of Statements | Source                                                                                                                                                                                                                                                                                                     |
|-------------------------------|----------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Management techniques | 1_ Project Planning.<br>2_ Quality Management      | 1-8                  | Unegbu, H. C. O., Yawas, D. S., & Dan-Asabe, B. (2022). An investigation of the relationship between project performance measures and project management practices of construction projects for the construction industry in Nigeria. Journal of King Saud University-Engineering Sciences, 34(4), 240-249 |
| Business Success              | 1-productivity<br>2- Performance of small business | 9-16                 | Pranowo, A. S., Sutrisno, J., Sulastiono, P., & Siregar, Z. M. E. (2020). The entrepreneurial competency, innovation capability, and business success: The case of footwear industry in Indonesia. Calitatea, 21(178), 20-25.                                                                              |

## 1. Personal Information:

|                                                                   |  |                   |  |                          |        |                     |  |                    |  |
|-------------------------------------------------------------------|--|-------------------|--|--------------------------|--------|---------------------|--|--------------------|--|
| 1. What is your gender?                                           |  |                   |  |                          |        |                     |  |                    |  |
| Male                                                              |  |                   |  |                          | Female |                     |  |                    |  |
| 2. What is your age?                                              |  |                   |  |                          |        |                     |  |                    |  |
| 18-25 years                                                       |  | 26-35 years       |  | 36-45 years              |        | 46-55 years         |  | 56 or older        |  |
| 3. What is your highest level of education?                       |  |                   |  |                          |        |                     |  |                    |  |
| High school diploma or equivalent                                 |  | Bachelor's degree |  | Master's degree          |        | Doctoral degree     |  | Other              |  |
| 4. How long have you been employed at Asem Films Company Company? |  |                   |  |                          |        |                     |  |                    |  |
| Less than 1 year                                                  |  | 1-3 years         |  | 4-6 years                |        | 7-10 years          |  | More than 10 years |  |
| 5. What is your current role/position at the company?             |  |                   |  |                          |        |                     |  |                    |  |
| Entry-level                                                       |  | Mid-level         |  | Senior-level             |        | Management          |  | Other              |  |
| 6. Which department do you currently work in?                     |  |                   |  |                          |        |                     |  |                    |  |
| Product Management                                                |  | Sales / Marketing |  | Development / Consulting |        | Finance/ Accounting |  | Other              |  |

**2. The First Variable Project Management techniques :** Project management techniques refer to the methods, tools, and processes used to plan, organize, and control the execution of projects within an organization. These techniques help ensure the successful completion of projects by effectively managing factors such as time, resources, quality, and risk.

| No.                   | statement                                                                                                  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|-----------------------|------------------------------------------------------------------------------------------------------------|-------------------|----------|---------|-------|----------------|
| 1. Project Planning.  |                                                                                                            |                   |          |         |       |                |
| 1.                    | The company has a well-defined project planning process.                                                   |                   |          |         |       |                |
| 2.                    | Project goals and objectives are clearly communicated to all team members.                                 |                   |          |         |       |                |
| 3.                    | The company effectively allocates resources (e.g., budget, personnel, time) for project implementation.    |                   |          |         |       |                |
| 4.                    | The company regularly monitors and adjusts project plans as needed.                                        |                   |          |         |       |                |
| 2. Quality Management |                                                                                                            |                   |          |         |       |                |
| 5.                    | The company has established quality control measures for project deliverables.                             |                   |          |         |       |                |
| 6.                    | The company actively seeks feedback from clients to improve project quality.                               |                   |          |         |       |                |
| 7.                    | The company provides training and development opportunities to enhance the skills of project team members. |                   |          |         |       |                |

|    |                                                                                                           |  |  |  |  |  |
|----|-----------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| 8. | The company has a system in place to address and resolve quality-related issues during project execution. |  |  |  |  |  |
|----|-----------------------------------------------------------------------------------------------------------|--|--|--|--|--|

**3. The Second Variable Business Success :** Perceived product quality refers to a customer's overall assessment and impression of the quality of a company's products or services. This is based on factors like customer experience, product features, design, and functionality.

| No.                              | statement                                                                                                          | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------|----------|---------|-------|----------------|
| 1. productivity                  |                                                                                                                    |                   |          |         |       |                |
| 9.                               | The company's project management techniques have led to increased employee productivity.                           |                   |          |         |       |                |
| 10.                              | The company's projects are completed within the planned timeframe.                                                 |                   |          |         |       |                |
| 11.                              | The company's project management techniques have reduced project-related waste and inefficiencies.                 |                   |          |         |       |                |
| 12.                              | The company's project management techniques have enabled it to take on more projects without compromising quality. |                   |          |         |       |                |
| 2. Performance of small business |                                                                                                                    |                   |          |         |       |                |
| 13.                              | The company's project management techniques have contributed to an increase in revenue.                            |                   |          |         |       |                |
| 14.                              | The company's project management techniques have helped it maintain a competitive edge in the market.              |                   |          |         |       |                |
| 15.                              | The company's project management techniques have led to an improvement in customer satisfaction.                   |                   |          |         |       |                |
| 16.                              | The company's project management techniques have enabled it to expand its operations or market share.              |                   |          |         |       |                |

## Statistical Analysis & Findings

**Correlation Matrix<sup>a</sup>**

| PP1 | PP2 | PP3 | PP4 | PQ1 | PQ2 | PQ3 | PQ4 |
|-----|-----|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|-----|

|                 |     |       |       |       |       |       |       |       |       |
|-----------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Correlation     | PP1 | 1.000 | .594  | .552  | .536  | .578  | .576  | .640  | .524  |
|                 | PP2 | .594  | 1.000 | .669  | .712  | .477  | .640  | .467  | .627  |
|                 | PP3 | .552  | .669  | 1.000 | .716  | .587  | .640  | .610  | .660  |
|                 | PP4 | .536  | .712  | .716  | 1.000 | .643  | .644  | .638  | .641  |
|                 | PQ1 | .578  | .477  | .587  | .643  | 1.000 | .644  | .651  | .453  |
|                 | PQ2 | .576  | .640  | .640  | .644  | .644  | 1.000 | .694  | .599  |
|                 | PQ3 | .640  | .467  | .610  | .638  | .651  | .694  | 1.000 | .638  |
|                 | PQ4 | .524  | .627  | .660  | .641  | .453  | .599  | .638  | 1.000 |
| Sig. (1-tailed) | PP1 |       | .000  | .000  | .000  | .000  | .000  | .000  | .000  |
|                 | PP2 | .000  |       | .000  | .000  | .000  | .000  | .000  | .000  |
|                 | PP3 | .000  | .000  |       | .000  | .000  | .000  | .000  | .000  |
|                 | PP4 | .000  | .000  | .000  |       | .000  | .000  | .000  | .000  |
|                 | PQ1 | .000  | .000  | .000  | .000  |       | .000  | .000  | .000  |
|                 | PQ2 | .000  | .000  | .000  | .000  | .000  |       | .000  | .000  |
|                 | PQ3 | .000  | .000  | .000  | .000  | .000  | .000  |       | .000  |
|                 | PQ4 | .000  | .000  | .000  | .000  | .000  | .000  | .000  |       |

a. Determinant = .004

### Communalities

|     | Initial | Extraction |
|-----|---------|------------|
| PP1 | 1.000   | .634       |
| PP2 | 1.000   | .814       |
| PP3 | 1.000   | .746       |
| PP4 | 1.000   | .756       |
| PQ1 | 1.000   | .788       |
| PQ2 | 1.000   | .716       |
| PQ3 | 1.000   | .787       |
| PQ4 | 1.000   | .711       |

Extraction Method: Principal  
Component Analysis.

### Total Variance Explained

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              | Rotation Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % | Total                             | % of Variance | Cumulative % |
| 1         | 5.269               | 65.863        | 65.863       | 5.269                               | 65.863        | 65.863       | 3.062                             | 38.271        | 38.271       |
| 2         | .682                | 8.529         | 74.391       | .682                                | 8.529         | 74.391       | 2.890                             | 36.121        | 74.391       |

|   |      |       |         |  |  |  |  |  |  |
|---|------|-------|---------|--|--|--|--|--|--|
| 3 | .494 | 6.171 | 80.563  |  |  |  |  |  |  |
| 4 | .484 | 6.056 | 86.619  |  |  |  |  |  |  |
| 5 | .360 | 4.505 | 91.125  |  |  |  |  |  |  |
| 6 | .293 | 3.665 | 94.789  |  |  |  |  |  |  |
| 7 | .254 | 3.179 | 97.968  |  |  |  |  |  |  |
| 8 | .163 | 2.032 | 100.000 |  |  |  |  |  |  |

Extraction Method: Principal Component Analysis.

### Rotated Component Matrix<sup>a</sup>

|     | Component |      |
|-----|-----------|------|
|     | 1         | 2    |
| PP2 | .866      |      |
| PQ4 | .771      | .341 |
| PP3 | .745      | .437 |
| PP4 | .724      | .481 |
| PQ1 |           | .850 |
| PQ3 | .362      | .810 |
| PP1 | .400      | .688 |
| PQ2 | .532      | .658 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

### Item Statistics

|     | Mean | Std. Deviation | N  |
|-----|------|----------------|----|
| PP1 | 3.26 | 1.002          | 95 |
| PP2 | 3.32 | 1.074          | 95 |
| PP3 | 3.53 | .921           | 95 |
| PP4 | 3.43 | .975           | 95 |
| PQ1 | 3.42 | .963           | 95 |
| PQ2 | 3.36 | .886           | 95 |

|     |      |      |    |
|-----|------|------|----|
| PQ3 | 3.48 | .944 | 95 |
| PQ4 | 3.39 | .937 | 95 |

### Item-Total Statistics

|     | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|-----|----------------------------|--------------------------------|----------------------------------|------------------------------|----------------------------------|
| PP1 | 23.93                      | 30.282                         | .696                             | .547                         | .919                             |
| PP2 | 23.87                      | 29.303                         | .731                             | .674                         | .916                             |
| PP3 | 23.66                      | 30.204                         | .782                             | .633                         | .912                             |
| PP4 | 23.76                      | 29.526                         | .801                             | .693                         | .910                             |
| PQ1 | 23.77                      | 30.584                         | .700                             | .581                         | .918                             |
| PQ2 | 23.83                      | 30.525                         | .782                             | .642                         | .912                             |
| PQ3 | 23.71                      | 30.210                         | .758                             | .683                         | .914                             |
| PQ4 | 23.80                      | 30.587                         | .723                             | .587                         | .916                             |

## SECOND V

### Correlation Matrix<sup>a</sup>

|                 |     | PR1   | PR2   | PR3   | PR4   | PE1   | PE2   | PE3   | PE4   |
|-----------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Correlation     | PR1 | 1.000 | .603  | .491  | .509  | .437  | .483  | .622  | .383  |
|                 | PR2 | .603  | 1.000 | .410  | .510  | .248  | .426  | .618  | .397  |
|                 | PR3 | .491  | .410  | 1.000 | .285  | .224  | .630  | .513  | .604  |
|                 | PR4 | .509  | .510  | .285  | 1.000 | .380  | .488  | .461  | .419  |
|                 | PE1 | .437  | .248  | .224  | .380  | 1.000 | .302  | .421  | .319  |
|                 | PE2 | .483  | .426  | .630  | .488  | .302  | 1.000 | .733  | .655  |
|                 | PE3 | .622  | .618  | .513  | .461  | .421  | .733  | 1.000 | .551  |
|                 | PE4 | .383  | .397  | .604  | .419  | .319  | .655  | .551  | 1.000 |
| Sig. (1-tailed) | PR1 |       | .000  | .000  | .000  | .000  | .000  | .000  | .000  |
|                 | PR2 | .000  |       | .000  | .000  | .008  | .000  | .000  | .000  |
|                 | PR3 | .000  | .000  |       | .003  | .015  | .000  | .000  | .000  |
|                 | PR4 | .000  | .000  | .003  |       | .000  | .000  | .000  | .000  |
|                 | PE1 | .000  | .008  | .015  | .000  |       | .001  | .000  | .001  |
|                 | PE2 | .000  | .000  | .000  | .000  | .001  |       | .000  | .000  |
|                 | PE3 | .000  | .000  | .000  | .000  | .000  | .000  |       | .000  |

|     |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|
| PE4 | .000 | .000 | .000 | .000 | .001 | .000 | .000 |
|-----|------|------|------|------|------|------|------|

a. Determinant = .017

### Communalities

|     | Initial | Extraction |
|-----|---------|------------|
| PR1 | 1.000   | .681       |
| PR2 | 1.000   | .569       |
| PR3 | 1.000   | .738       |
| PR4 | 1.000   | .594       |
| PE1 | 1.000   | .532       |
| PE2 | 1.000   | .777       |
| PE3 | 1.000   | .727       |
| PE4 | 1.000   | .698       |

Extraction Method: Principal  
Component Analysis.

### Total Variance Explained

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              | Rotation Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % | Total                             | % of Variance | Cumulative % |
| 1         | 4.336               | 54.199        | 54.199       | 4.336                               | 54.199        | 54.199       | 2.758                             | 34.480        | 34.480       |
| 2         | .980                | 12.256        | 66.455       | .980                                | 12.256        | 66.455       | 2.558                             | 31.975        | 66.455       |
| 3         | .765                | 9.566         | 76.022       |                                     |               |              |                                   |               |              |
| 4         | .600                | 7.498         | 83.520       |                                     |               |              |                                   |               |              |
| 5         | .459                | 5.741         | 89.261       |                                     |               |              |                                   |               |              |
| 6         | .403                | 5.040         | 94.301       |                                     |               |              |                                   |               |              |
| 7         | .289                | 3.607         | 97.908       |                                     |               |              |                                   |               |              |
| 8         | .167                | 2.092         | 100.000      |                                     |               |              |                                   |               |              |

Extraction Method: Principal Component Analysis.

### Rotated Component Matrix<sup>a</sup>

| Component |   |
|-----------|---|
| 1         | 2 |

|     |      |      |
|-----|------|------|
| PR3 | .847 |      |
| PE2 | .818 | .329 |
| PE4 | .803 |      |
| PE3 | .624 | .581 |
| PR1 | .365 | .740 |
| PR4 |      | .729 |
| PE1 |      | .728 |
| PR2 | .377 | .654 |

Extraction Method: Principal

Component Analysis.

Rotation Method: Varimax with

Kaiser Normalization.

a. Rotation converged in 3 iterations.

#### Item Statistics

|     | Mean  | Std. Deviation | N  |
|-----|-------|----------------|----|
| PR1 | 3.17  | .996           | 95 |
| PR2 | 3.22  | .947           | 95 |
| PR3 | 3.58  | 1.037          | 95 |
| PR4 | 3.28  | 1.059          | 95 |
| PE1 | 18.73 | 19.874         | 95 |
| PE2 | 3.58  | 1.078          | 95 |
| PE3 | 3.61  | .949           | 95 |
| PE4 | 3.52  | 1.080          | 95 |

#### Item-Total Statistics

|     | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|-----|----------------------------|--------------------------------|----------------------------------|------------------------------|----------------------------------|
| PR1 | 39.52                      | 494.550                        | .532                             | .556                         | .220                             |
| PR2 | 39.46                      | 503.102                        | .356                             | .525                         | .236                             |
| PR3 | 39.11                      | 502.585                        | .332                             | .526                         | .235                             |
| PR4 | 39.40                      | 496.264                        | .461                             | .439                         | .224                             |
| PE1 | 23.96                      | 29.743                         | .435                             | .287                         | .880                             |
| PE2 | 39.11                      | 497.563                        | .424                             | .693                         | .226                             |

|     |       |         |      |      |      |
|-----|-------|---------|------|------|------|
| PE3 | 39.07 | 495.495 | .538 | .698 | .222 |
| PE4 | 39.17 | 497.652 | .421 | .523 | .226 |

### Descriptive Statistics v1

|                               | N         | Minimum   | Maximum   | Mean      |            | Std. Deviation | Variance  |
|-------------------------------|-----------|-----------|-----------|-----------|------------|----------------|-----------|
|                               | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic      | Statistic |
| Project_Planning              | 95        | 1         | 5         | 3.38      | .087       | .844           | .713      |
| Quality_Management            | 95        | 1         | 5         | 3.41      | .081       | .785           | .617      |
| Project_Management_techniques | 95        | 1         | 5         | 3.40      | .079       | .772           | .595      |
| Valid N (listwise)            | 95        |           |           |           |            |                |           |

### Descriptive Statistics v2

|                               | N         | Minimum   | Maximum   | Mean      |            | Std. Deviation | Variance  |
|-------------------------------|-----------|-----------|-----------|-----------|------------|----------------|-----------|
|                               | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic      | Statistic |
| productivity                  | 95        | 1         | 5         | 3.31      | .080       | .781           | .610      |
| Performance_of_small_business | 95        | 1         | 15        | 7.36      | .541       | 5.273          | 27.803    |
| Business_Success              | 95        | 1         | 9         | 5.34      | .292       | 2.848          | 8.111     |
| Valid N (listwise)            | 95        |           |           |           |            |                |           |

### Correlations

|                               | Project_Planning    | Quality_Management | Project_Management_techniques | productivity | Performance_of_small_business | Business_Success |        |
|-------------------------------|---------------------|--------------------|-------------------------------|--------------|-------------------------------|------------------|--------|
| Project_Planning              | Pearson Correlation | 1                  | .834**                        | .924**       | .756**                        | .523**           | .588** |
|                               | Sig. (2-tailed)     |                    | <.001                         | <.001        | <.001                         | <.001            | <.001  |
| Quality_Management            | N                   | 95                 | 95                            | 95           | 95                            | 95               | 95     |
|                               | Pearson Correlation | .834**             | 1                             | .976**       | .765**                        | .463**           | .534** |
|                               | Sig. (2-tailed)     | <.001              |                               | <.001        | <.001                         | <.001            | <.001  |
|                               | N                   | 95                 | 95                            | 95           | 95                            | 95               | 95     |
| Project_Management_techniques | Pearson Correlation | .924**             | .976**                        | 1            | .793**                        | .492**           | .564** |
|                               | Sig. (2-tailed)     | <.001              | <.001                         |              | <.001                         | <.001            | <.001  |
|                               | N                   | 95                 | 95                            | 95           | 95                            | 95               | 95     |
|                               | Pearson Correlation | .756**             | .765**                        | .793**       | 1                             | .489**           | .590** |
| productivity                  | Sig. (2-tailed)     | <.001              | <.001                         | <.001        |                               | <.001            | <.001  |
|                               | N                   | 95                 | 95                            | 95           | 95                            | 95               | 95     |
| Performance_of_small_business | Pearson Correlation | .523**             | .463**                        | .492**       | .489**                        | 1                | .993** |
|                               | Sig. (2-tailed)     | <.001              | <.001                         | <.001        | <.001                         |                  | <.001  |
| Business_Success              | N                   | 95                 | 95                            | 95           | 95                            | 95               | 95     |
|                               | Pearson Correlation | .588**             | .534**                        | .564**       | .590**                        | .993**           | 1      |
|                               | Sig. (2-tailed)     | <.001              | <.001                         | <.001        | <.001                         | <.001            |        |
|                               | N                   | 95                 | 95                            | 95           | 95                            | 95               | 95     |

\*\* . Correlation is significant at the 0.01 level (2-tailed).