

Midocean University

College of Administration

Master of Business Administration (MBA)



**Evaluating the Strategic Impact of IKTVA on Supply Chain Performance,
Supplier Development, and Local Value Creation:
Evidence from Saudi Aramco**

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Academic Year

2026

حقوق الطباعة

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الباحث

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ACKNOWLEDGEMENT

I would like to express my sincere gratitude and appreciation to my supervisors, Dr. Al-Faisal Abdul Hamid and Dr. Fayez Jarad, for their valuable and appreciated guidance, constructive and supportive feedback, and continuous support and motivation throughout the preparation of this research proposal.

I would also like to extend my great appreciation to the Faculty of Management at Midocean University for providing the superior academic environment and needed resources which are necessary for the successful completion of this work.

My sincere and honest thanks are extended to all participants and professionals who will contribute to this research by sharing their knowledge, extensive experiences, and insights related to the IKTVA program and supply chain management implementation and practices.

Finally, I am particularly grateful to my family for their level of understanding and continued support while balancing academic responsibilities, professional commitments, and family obligations throughout this MBA program.

Haitham Al-Haj

2026

DECLARATION

I hereby declare that this report was fully prepared and completed in accordance with the Midocean University guidelines following both academic and ethical compliance and standards. Moreover, all the sources of information have been acknowledged and referenced. Finally, this report is totally my own work as per the assignment shared with my academic supervisors.

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ABSTRACT

Saudi Aramco introduced the In-Kingdom Total Value Add (IKTVA) program to enhance local content, strengthen domestic supply chains, and promote supplier development in direct and supportive alignment with Saudi Vision 2030. Despite the rising importance of localization initiatives in the Kingdom of Saudi Arabia, empirical verification regarding the practical effectiveness of the IKTVA program remains insufficient. This research aims to evaluate the strategic impact of IKTVA on supply chain performance, supplier development, and local value creation within the Saudi Aramco ecosystem.

The study adopts a quantitative research approach using a structured questionnaire distributed to employees, supply chain professionals, procurement specialists, supplier representatives, and other stakeholders involved in IKTVA-related activities. The study examines the influence of IKTVA Program Effectiveness as the independent variable on Supply Chain Performance, Supplier Development, and Local Value Creation as the dependent variables. Purposive samples will be used to collect approximately 200 responses. Full quantitative analysis which is done and executed via SPSS will include descriptive statistics, reliability testing, Pearson correlation, and multiple regression analysis.

The study is expected to provide valuable insights into the effectiveness of IKTVA initiatives and to highlight and identify opportunities which will result in enhancing the outcomes of localization. The outcomes and findings of the study will offer actionable insights into localization dynamics, identifying distinct operational opportunities to optimize industrial outcomes.

Keywords: IKTVA, Supply Chain Performance, Supplier Development, Local Value Creation, Saudi Aramco, Saudi Vision 2030, Localization.

الملخص

قدمت شركة أرامكو السعودية برنامج إضافة القيمة الإجمالية داخل المملكة (IKTVA) لتعزيز المحتوى المحلي، وتقوية سلاسل التوريد المحلية، وتعزيز تطوير الموردين بما يتماشى بشكل مباشر وداعم مع رؤية السعودية 2030. على الرغم من الأهمية المتزايدة لمبادرات التوطين في المملكة العربية السعودية، لا يزال التحقق التجريبي فيما يتعلق بالفعالية العملية لبرنامج IKTVA غير كاف. يهدف هذا البحث إلى تقييم الأثر الاستراتيجي لبرنامج IKTVA على أداء سلسلة التوريد، وتطوير الموردين، وخلق القيمة المحلية داخل النظام البيئي لأرامكو السعودية.

تبنت الدراسة منهجاً بحثياً كمياً باستخدام استبيان منظم تم توزيعه على الموظفين، ومتخصصي سلسلة التوريد، وخبراء المشتريات، وممثلي الموردين، وغيرهم من أصحاب المصلحة المشاركين في الأنشطة المتعلقة ببرنامج IKTVA. اتبعت الدراسة في تأثير فعالية برنامج IKTVA كمتغير مستقل على أداء سلسلة التوريد، وتطوير الموردين، وخلق القيمة المحلية كمتغيرات تابعة. تم استخدام عينات هادفة لجمع ما يقارب 200 رد. تم إجراء التحليل الكمي الكامل باستخدام برنامج SPSS ، وتضمن الإحصاء الوصفي، واختبارات الموثوقية، وارتباط بيرسون، وتحليل الانحدار المتعدد.

من المتوقع أن توفر الدراسة رؤية قيمة حول فعالية مبادرات IKTVA وتبسيط الضوء على الفرص التي من شأنها تعزيز نتائج التوطين. ستقدم نتائج الدراسة رؤية قابلة للتطبيق حول ديناميكيات التوطين، وتحديد فرص تشغيلية متميزة لتحسين النتائج الصناعية.

الكلمات المفتاحية: IKTVA ، أداء سلسلة التوريد، تطوير الموردين، خلق القيمة المحلية، أرامكو السعودية، رؤية السعودية 2030، التوطين.

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LIST OF ABBREVIATIONS

Table 1: Research Abbreviations

Abbreviation	Full Meaning
AI	Artificial Intelligence
APA	American Psychological Association
COPE	Committee on Publication Ethics
CSR	Corporate Social Responsibility
DV	Dependent Variable
EFA	Exploratory Factor Analysis
ESG	Environmental, Social, and Governance
F-test	Fisher's F-test (Analysis of Variance)
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
H1, H2, H3	Hypotheses 1, 2, and 3
IKTVA	In-Kingdom Total Value Add
IoT	Internet of Things
IRB	Institutional Review Board
IV	Independent Variable
KMO	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
KPI	Key Performance Indicator
KSA	Kingdom of Saudi Arabia
LVC	Local Value Creation
MBA	Master of Business Administration
MENA	Middle East and North Africa
n	Sample Size
P-value	Probability Value (Statistical Significance)
PCA	Principal Component Analysis
PDO	Petroleum Development Oman
PIF	Public Investment Fund
R&D	Research and Development
RBV	Resource-Based View
R ²	R-squared (Coefficient of Determination)

SAGIA	Saudi Arabian General Investment Authority
SCM	Supply Chain Management
SCP	Supply Chain Performance
SD	Supplier Development
SDGs	Sustainable Development Goals
SME	Small and Medium Enterprise
SPSS	Statistical Package for the Social Sciences
VIF	Variance Inflation Factor
WMA	World Medical Association
β	Beta (Standardized Regression Coefficient)
ε	Epsilon (Error Term in Regression)

1. CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Global market instability forces modern organizations to apply changes to their business strategical plans, aiming to secure local supply chains, shifting national economic development from a secondary goal to a primary and strategic priority. Localization initiatives were implemented by both governments and large corporations worldwide, with an aim to increase domestic participation in economic activities, while working to develop local suppliers, and to create employment opportunities for locals. All of that, while promoting sustainable growth in economy and meeting future needs. Localization has become a strategic priority for the Kingdom of Saudi Arabia (KSA), specially under the Saudi Vision 2030, which reduce the dependence on oil revenues, improve the diversity of economy, support and strengthen the local industries, and develop and increase the contribution of the private sector to national development (Saudi Vision 2030, 2016)).

Saudi Aramco introduced the In-Kingdom Total Value Add (IKTVA) program in 2015, as part of the national transformation agenda. The IKTVA program was established and initiated as a strategic initiative which is designed to increase local content, promote the development of suppliers, encourage and support investment in local manufacturing, and to enhance the competitiveness of the Kingdom's industrial sector. Saudi Aramco seeks to create a long-term economic value through this initiative. Not only that, but to encourage suppliers and contractors to have their international investments localized, while simultaneously improving the efficiency of operations and to have sustainability in the supply chain (Saudi Aramco, 2024).

Currently the IKTVA program is considered the largest initiatives in the Middle East for localization and a key component of the Saudi Arabia's economic development strategy. The program simply focusses on increasing the local procurement, supporting the growth of Saudi-owned enterprises, develop workforce capabilities, facilitate the transfer of international technology to be locally, and attract the foreign international investment to be locally and actively in the Kingdom (Basahal et al., 2021). All of that can be achieved by encouraging suppliers to establish a network of local operations, and to expand their capabilities within the Kingdom and to resolve all their obstacles with a modern technique, to keep their momentum up for fast and quick transformation and exchange of expertise. Al-Dossary (2024) emphasized the growing importance of digital transformation in localization efforts within the GCC energy sector,

highlighting how technologies such as artificial intelligence and blockchain are enabling more effective supply chain integration and local content tracking. Al-Saud (2023) examined the challenges and opportunities of workforce development and Saudization in Saudi Arabia, emphasizing the importance of aligning training programs with industry needs to ensure sustainable employment for Saudi nationals. Kojima (2019) critically assessed local content policies, noting potential inefficiencies while acknowledging their importance for economic development. All of that can be achieved by encouraging suppliers to establish a network of local operations, and to expand their capabilities within the Kingdom and to resolve all their obstacles with a modern technique, to keep their momentum up for fast and quick transformation and exchange of expertise. Additionally, IKTVA aims to strengthen the resilience in supply chain, while making a positive contribution to the objectives of national economic. Stevens (2003) argued that resource-rich countries often fail to benefit from their natural resource wealth without effective local content policies, which is a key rationale for initiatives like IKTVA. Localization initiatives have become increasingly important in supporting economic diversification, industrial development, and sustainable growth within Saudi Arabia (Saudi Vision 2030, 2016); Saudi Aramco, 2024).

To guarantee organizational success, the excellence performance of supply chain has become a critical factor. By increasing the effectiveness level of supply chain management, it can enable both the organization to improve its operational efficiency, along with reducing unnecessary build up costs, improving the quality of products by meeting their quality and reducing the number of defective units, helping in improving their delivery performance, all of that while increasing customer satisfaction by meeting their requirements and their actual needs and demand (Christopher, 2022; Chopra, 2023). If we focus on organizations that are operating in extremely competitive industries, like energy sector, we can easily note that maintaining a reliable and efficient supply chain is essential for achieving strategic objectives, all of that, while reducing the risk of the operation to the minimum or extremely zero level. Consequently, by understanding the impact of localization initiatives such as IKTVA on supply chain performance it is highly important for experts, policymakers and strategy developers (Krause et al., 2021; Truong et al., 2021).

Nowadays, supplier development is a key objective of modern supply chain strategies, additionally to improvement in the performance of supply chain. The scope of supplier development has widely increased to include activities designed to enhance suppliers' capabilities to improve their operational performance, to strengthen their quality standards, and to increase the compactivities as well. Organizations can help and assist suppliers to achieve higher levels of both performance and sustainability, through specified and focused training programs, high technical support, improved and modern knowledge transfer initiatives, and successful strategic partnerships. It is clear now that the IKTVA program emphasizes supplier development as a main mechanism for strengthening the local industrial base and supporting the growth in economics in the short and long-term plans (Porter & Kramer, 2019; Freeman, 2020).

Local value creation is another outcome development from localization initiatives, through IKTVA program. What we mean by local value creation is to generate in economic and social, and the total benefits within a specific geographic or region which resulted from a combination of multiple activities like investment, employment, procurement, and knowledge development and sharing. As per the context of Saudi Vision 2030, local value creation considered a critical item for the sustainable development. As result of increasing the local participation in supply chains and supporting domestic investment, programs such as IKTVA can easily contribute to job creation, industrial diversification, technology transfer and flexibility in economics.

It was noticed that limited research has examined IKTVA program's overall effectiveness in achieving its intended objection, although overall agreement on IKTVA importance for the local development and supply chain improvement. The current existing studies have focused on the policy for localization, the diversification in economics, and the requirements for local content, while minimum attention has been given to evaluate the strategic impact of IKTVA on supply chain performance, supplier development, and local value creation from the point view of the key stakeholders. Furthermore, the degree of which IKTVA contribute to have a sustainable competitive advantage with Saudi Aramco's supply chain ecosystem was not fully explored and only limited advantages were mentioned with no full details and no full explanations, which makes it not explored as supposed to be.

Given the growing importance and demand of localization initiatives and Saudi Aramco's strategic role in supporting national economic development, there is a need for empirical research that

evaluates the effectiveness of the IKTVA program. By fully understanding the relationship between IMTVA initiatives, implementation, supply chain performance, supplier effectiveness and performance, and local value creation, we can provide a valuable input for decision-makers, policymakers, and the international and local industry participants. Such knowledge sharing can support future plans for localization improvements, strategic allocating and to contribute to the final achievement of Saudi Vision 2030 goals. Alsagheer and Al-Hassan (2023) examined the systems perspective of local content in Saudi Arabia, highlighting its role in economic diversification and industrial development.

As a result, this study seeks to evaluate the strategic impact of IKTVA on supply chain performance, in the development of supplier, and to the local value creating within the Saudi Aramco ecosystem. Our expectation from the findings are to contribute and participate in both the academic knowledge and practically through the right decision-makers, by identifying various opportunities which can enhance the overall effectiveness of IKTVA initiatives and to help maximizing the total contribution to a sustainable economic development in the Kingdom of Saudi Arabia and to achieve the Country 2030 vision .

My own experience working within the Saudi energy sector has given me a unique perspective on the transformative potential of localization initiatives. Over the past two decades, I have observed closely and clearly how programs like IKTVA have shifted the model from viewing suppliers as ordinary vendors to recognizing them as strategic business partners into the national development. This personal experience and observation, combined with the academic literature on supply chain management and local content, which resulted in continually motivating me to conduct this empirical study and academic investigation.

1.2 Problem Statement

In order to strengthen domestic industries, to enhance and improve the diversifications of economic, and to reduce dependence on imported goods and services, the Kingdom of Saudi Arabia has implemented various initiatives on localization process. Among these initiatives, Saudi Aramco has emerged one of the most important initiatives and strategic mechanism for localization which is the In-Kingdom Total Value Add (IKTVA) program, by promoting local content, supplier development, and sustainable economic growth. It was clearly noticed and monitored by the country leaders and big international and national investors, that, since the implementation of

IKTVA, by Saudi Aramco, it has encouraged various suppliers and both local and international contractors to increase their local investment, to develop workforce capabilities, and to establish manufacturing facilities within the Kingdom, in a total safe and encouragements ecosystem monitored, supported and supervised by Saudi Aramco leaders and IKTVA management teams.

Despite IKTVA's main integration into Saudi Vision 2030, empirical data remains scarce and limited regarding its direct operational impact on Aramco's core supply chain performance, develop the enhancement of the suppliers and to create a sustainable local value add within Saudi Aramco's supply chain ecosystem, the current existing studies have not extended their work and efforts and attention to examine the practical and operational impact of IKTVA from the main perspective of stakeholders, directly, who are involved in the activities of supply chain, but it focused only on the policies and standards at a macro level and with a general review only.

It is worth mentioning that organizations are still continuously facing challenges that are related to the efficiency of supply chain, the capability development of suppliers, the target for localization, the long-term and short-term value creation and their real localization for their international money and experience for their international expertise and knowledge transfer. Stevens (2003) argued that without effective localization policies, resource-rich countries risk capturing limited economic value from their natural resources. As a result, it is most common to have a continued need to evaluate whether IKTVA initiatives are achieving their set up objectives and how effectively it is contributing to the organizational goals and the local developments as well. This study filling this gap, by investigating the strategic impact of IKTVA on supply chain performance, development of suppliers, and creation for local value creation within the Saudi Aramco ecosystem.

In my professional capacity and capability, I have frequently encountered discussions about the effectiveness of IKTVA that were based on subjective evidence rather than systematic, empirical investigation. Many business colleagues and industry peers often expressed strong opinions about the program's impact, yet there was a clear absence of accurate and precise, data-driven evaluation. This gap between perception and evidence is precisely what prompted and motivivity encouraged me to undertake this research—to provide the needed and supported empirical foundation that has been missing from these important conversations, for long time and to add value to the academic

readers and reviewers in and outside the Kingdom of Saudi Arabia and within the Saudi Aramco ecosystem, and through its suppliers and vendors.

1.3 Research Aim

The main aim of this study is to evaluate the strategic impact of the In-Kingdom Total Value Add (IKTVA) program on multiple aspects, which are: supply chain performance, supplier development, and local value creation within the Saudi Aramco ecosystem and to identify opportunities for enhancing the effectiveness of localization initiatives in alignment with Saudi Vision 2030.

1.4 Research Objectives

This study seeks to achieve the following objectives:

1. To evaluate the impact of IKTVA implementation on supply chain performance within Saudi Aramco's ecosystem.
2. To assess the contribution of IKTVA to supplier development and capability enhancement.
3. To examine the influence of IKTVA on local value creation within Saudi Arabia.

1.5 Research Questions

Main Research Question

What is the strategic impact of the IKTVA program on supply chain performance, supplier development, and local value creation within the Saudi Aramco ecosystem?

Sub-Research Questions

1. How does IKTVA impact supply chain performance?
2. How does IKTVA contribute to supplier development?
3. How does IKTVA support local value creation?

1.6 Research Hypotheses

The study proposes the following hypotheses for empirical testing:

1. H1: There is a statistically significant positive relationship between IKTVA implementation and supply chain performance.

2. H2: There is a statistically significant positive relationship between IKTVA implementation and supplier development.
3. H3: There is a statistically significant positive relationship between IKTVA implementation and local value creation.

1.7 Significance of the Study

1.7.1 Academic Significance

This study is expected to make a valuable contribution and to provide a valuable contribution that is not limited to academic knowledge but is extended to cover both the industry practices and the development in policies. From the academic point of view, the research will enrich the existing literature concerning the localization programs, supply chain management, supplier development, and local value creation. Additionally, the study will also contribute to better understanding how initiatives for strategic localization can influence the performance of organizations and to develop economic within emerging economies.

1.7.2 Practical Significance

From practical perspective point of view, the outcomes can help Saudi Aramco, suppliers, various contractors, and decision-makers in evaluating how effective are the initiatives of IKTVA and to identify different opportunities for development and improvement. The research can support in developing more effective ways in strategical localizations, having better and stronger supplier relationships, and to enhance and improve the performance of supply chain.

1.7.3 National Significance

At the national level, the study has full alignment with the objectives of Saudi Vision 2030. This can be achieved by examining different mechanisms that can contribute to diversity in economics, growth in industry, generate opportunities for employment, and to have a satisfactory level in sustainability for local content development within initial economies. The study contributes to both academic knowledge and industry practice by examining the strategic role of localization initiatives in improving supply chain outcomes and creating sustainable value (Christopher, 2022; Chopra, 2023).

This research holds personal significance for me as a professional who has witnessed the evolution of Saudi Arabia's localization efforts over the years. Not limited to the current recent progress of

IKTVA, but from the very early beginning of it, as prototype example. I have seen personally how programs like IKTVA can create meaningful opportunities for local businesses and workers. By providing empirical evidence of the program's impact, I hope to positive and powerful contribute to the ongoing improvement of localization strategies and to support the achievement of Saudi Vision 2030 objectives. I also hope that the findings will serve as a resource for decision-makers who are committed to maximizing the benefits of localization for the Kingdom. That can be extended to the list of international and local suppliers and vendors, who are working to support the IKTVA Program, both directly and indirectly, or through products and services as well. Al-Shammari and Al-Dossary (2023) emphasized the importance of supply chain resilience in localization efforts, supporting the national significance of this research.

1.8 Scope of the Study

This study focuses on evaluating the strategic impact of the IKTVA program within the Saudi Aramco supply chain ecosystem. The research examines both the perceptions and experiences of employees, the professionals of supply chain, specialists in procurements, representatives of various suppliers, and the listed of stakeholders who are directly involved in the IKTVA-related activities.

The study investigates the relationship between IKTVA implementation and all three key dimensions, which are: supply chain performance, supplier development, and local value creation. All the data will be collected through a well determined and well-established structured questionnaire distributed among participants who are operating within the Kingdom of Saudi Arabia.

We have limited the geographical scope of this study to be limited only to the Kingdom of Saudi Arabia. Additionally, the scope of the organizational focuses only on Saudi Aramco and the organizations who are participating in the IKTVA initiatives. This study is conducted during the academic year 2026 and will rely on quantitative research methods for data collection and analysis.

The study does not evaluate confidential operational performance data from Saudi Aramco and protect that confidentiality information. Despite that, it focuses on perceptions of participants.

1.9 Delimitations of the Study

This study is delimited to stakeholders who are directly involved in Saudi Aramco's supply chain ecosystem and IKTVA-related activities. The research focuses exclusively on three main outcomes variables, which are: supply chain performance, supplier development, and local value creation. Other potential outcomes, such as environment sustainability, financial performance, and international competitiveness, are beyond the scope of this study. Furthermore, the study adopts a quantitative approach and relies only on questionnaire responses which are collected during the research period.

1.10 Definition of Key Terms

For the purpose of this study, the following key terms are defined to provide a clear and better understanding of the concepts used throughout the research.

IKTVA (In-Kingdom Total Value Add)

Saudi Aramco introduced this strategic program, with an objective to increase the local content, develop suppliers domestically, promote and increase investments, and to enhance the creation of economic value specifically and particularly within the Kingdom of Saudi Arabia (Saudi Vision 2030, 2016).

- **Supply Chain Performance**

The performance of supply chain measures the ability of organization supply chain in achieving a number of goals, listed as, operational efficiency, effectiveness in costs, improvement in quality of services and products, applying reliability in delivery, flexibility in operations, and the overall performance in business (Basahal et al., 2021).

- **Supplier Development**

Various organizations assist suppliers via a systematic process, to improve the suppliers' capabilities, performance in operations, standards in quality, technological competencies and competitiveness (Krause et al., 2021; Truong et al., 2021).

- **Local Value Creation**

Economic generation, industrial and social development, the benefits in employment within a specific country or region through the supported and successful local investment, active procurements processes, development in workforce, and growth in industrial activities (Porter & Kramer, 2019; Freeman, 2020).

- **Localization**

It is a strategic approach by decision makers, aiming to increase the participation of domestics in various activities of economics, through the local industries development, suppliers and workforce capabilities. Additionally, to widen the scale of investment opportunities.

- **Saudi Vision 2030**

It covers the national framework of transformation, established and agreed on by the Government of Saudi Arabia, aiming to diversify the economy, enhance the local competitiveness, empower the local investment and industries, all of that while promote and advertise for a continuous and sustainable development (Saudi Vision 2030, 2016).

1.11 Assumptions of the Study

The study assumes that respondents possess enough and sufficient knowledge and experiences level regarding IKTVA-related activities within the Saudi Aramco supply chain ecosystem. It is also important to clarify that; it is also assumed that participants will provide honest and accurate responses to the provided and shared questionnaire. Furthermore, the study assumes that the selected sample of participants adequately represents the target population involved in IKTVA implementation and supply chain operations.

1.12 Study Limitations

It is important to explain that the study is limited to participants who are involved directly or indirectly in Saudi Aramco's supply chain ecosystem and to the implementation of the IKTVA program. As per the previously mentioned, the findings may therefore not be fully generalizable to other industries or organizations outside the Kingdom of Saudi Arabia. In addition, the study adopts a cross-sectional design and relies on self-reported questionnaire responses, which may be influenced by both individual perceptions and level of experiences.

In addition, to what was mentioned earlier, the use of purposive sampling may limit the generalizability of findings to the group of wider population.

1.13 Structure of the Dissertation

This dissertation is organized into five chapters:

- Chapter One: Introduction presents the background, problem statement, research aim, objectives, questions, hypotheses, significance, scope, delimitations, and definitions.
- Chapter Two: Literature Review reviews the relevant literature on localization initiatives, supply chain performance, supplier development, local value creation, and the theoretical foundations of the study.
- Chapter Three: Research Methodology describes research philosophy, approach, design, population, sampling, data collection methods, instrument, validity, reliability, and data analysis techniques.
- Chapter Four: Data Analysis and Results present the statistical analysis using SPSS, including descriptive statistics, reliability analysis, validity assessment, correlation analysis, and regression analysis.
- Chapter Five: Discussion, Conclusions, and Recommendations discuss the findings, presents theoretical and practical implications, proposes recommendations, acknowledges limitations, and suggests directions for future research.

1.14 Chapter Summary

To summarize chapter one, it introduced the background and context of the study, by discussing the importance of localization initiatives and their highly contribution to develop the economic within Saudi Arabia. The chapter also presented multiple topics, like the research problem, research aim, research objectives, research questions, research hypotheses, research significance, research scope, research delimitations, and the key definitions which are relevant to the study. Chapter one established the foundation for examining the strategic impact of the IKTVA program on supply chain performance, supplier development, and local value creation. In the next chapter, we will review the relevant literature and theoretical foundations that best support the study.

In this chapter, I have laid the foundation for my investigation of the IKTVA program by expressing the research problem, objectives, and significance. The chapter reflects my personal

commitment to contributing to the academic literature on localization initiatives while providing practical perceptions for industry practitioners.

2. CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter we will review all the main literature which are associated with localization initiatives, performance of supply chain, development of supplier, and local value creation. The main purpose of literature review is to put the foundation for both theoretical and conceptual of the study, to be able to clearly identify the main key concepts which are related to the IKTVA program, and to examine the findings of previous research that are relevant to the research topic. Furthermore, the chapter explore the relationship between implementation of IKTVA and outcomes of organization performance within in Saudi Aramco ecosystem specifically. Additionally, the chapter clearly highlight and identify the current existing gaps in research and develop the theoretical framework which easily guide the current study.

When I started my literature review, I noticed research on localization policies and supply chain management, on the other hand, there was almost nothing looking directly at the IKTVA Program. This clearly highlights how much of gap there is in the current research, and it more convinced me that my study is highly needed. In the review below, I am bringing together the existing research and breaking down both theories and data that from the foundation of my work and analysis.

2.2 Theoretical Framework

In order to understand this theory better, we need first to identify the following.

Both Stakeholder Theory and Resource-Based View (RBV), are the primary support for this study.

2.2.1 Resource-Based View (RBV)

It is important to keep in mind that the Resource-Based View proposes that to achieve suitability in competitive advantage, through valuable, rare, inimitable, and organizationally embedded resources and capabilities. I find the Resource-Based View particularly compelling for this study because it explains why companies like Saudi Aramco invest so heavily in localization. The theory essentially argues that competitive advantage comes not just from what a company does, but from what it uniquely possesses—resources that are valuable, rare, and difficult for competitors to copy. In the context of IKTVA, I believe the program's real strength lies in building these unique resources: developing local supplier capabilities, creating a skilled Saudi workforce, and fostering technological expertise that cannot be easily replicated elsewhere.

What can be considered as strategic resources are supplier capabilities, workforce competencies, expertise in technology, and capacity for local manufacturing, which can contribute to the performance of organizations. It is very important to know that the IKTVA program seeks to strengthen these resources, through multiple ways, like variable initiatives for localizations, implementing and applying specific and well oriented programs to develop suppliers, and different activities which result in capability-building. Building on the foundational RBV framework, Teece (2007) introduced the concept of dynamic capabilities, which explains how firms adapt and reconfigure their resources in response to changing market conditions.

As a result, RBV can provide a unique theoretical explanation for how IKTVA may positively contribute to improving the supply chain performance and in creating a local value (Barney, 1991; Barney et al., 2021). Consequently, RBV supports the argument that localization initiatives can enhance organizational performance through the development of valuable internal capabilities and strategic resources. Teece (2022) extended RBV to the context of localization programs, emphasizing the importance of dynamic capabilities in developing local supplier networks and workforce competencies in emerging economies.

2.2.2 Stakeholder Theory

The Stakeholder Theory suggests that organizations can create value through effective relationships with all the stakeholders, including but limited to, employees, suppliers, different customers, governments, and local communities. In my experience working in the Saudi energy sector, I have observed that the most successful initiatives are those that create value for everyone involved—not just the company driving the initiative. Stakeholder Theory captures this perfectly. It argues that organizations should consider the interests of all stakeholders, not just shareholders. IKTVA exemplifies this by creating benefits for Saudi Aramco, suppliers, employees, local communities, and the nation. This is why I believe Stakeholder Theory provides such a powerful lens for understanding the program's impact. When making strategic decisions, the theory emphasizes the importance of balancing between the different stakeholder interests (Freeman, 2020).

Within the IKTVA perspective, we can clearly note that multiple stakeholders are directly involved to achieve the objectives of localizations, that include but not limited to, Saudi Aramco, suppliers, various contractors, group of employees, government and its related agencies, and finally, the local communities. Therefore, we can see that the Stakeholder Theory provides a framework, which is

useful for better understanding how different initiatives for localization can contribute to generating value across different groups of stakeholders. Therefore, Stakeholder Theory provides a suitable lens for understanding how IKTVA creates value for multiple stakeholder groups within the Saudi Aramco ecosystem. Freeman and Moutchnik (2022) applied stakeholder theory to the energy sector, demonstrating how organizations like Saudi Aramco can effectively balance economic and social objectives while creating value for multiple stakeholder groups.

2.2.3 Local Content Theory

Local Content Theory emerged from the resource curse literature, which examined how resource-rich countries often fail to benefit from their natural resource wealth (Stevens, 2003). The theory argues that local content policies can help capture economic value from resource extraction and ensure that benefits are shared with local populations (Al-Fawzan, 2010). Al-Fawzan (2020) provided a comparative analysis of local content policies across different contexts, identifying both success factors and challenges in implementing effective localization strategies. Kojima (2019) critically assessed local content policies, noting potential inefficiencies and the need for balanced implementation that considers both localization objectives and international competitiveness.

- **Application to This Study:**

Local Content Theory provides a framework for understanding how the IKTVA program captures economic value within the Kingdom of Saudi Arabia. By encouraging local procurement, manufacturing, and workforce development, the program ensures that economic benefits are retained domestically rather than flowing to international suppliers.

- **Critical Analysis:**

While Local Content Theory has been influential in shaping policy, critics argue that poorly designed local content policies can create inefficiencies and reduce competitiveness (Kojima, 2019). This study examines how IKTVA balances localization objectives with the need for competitiveness and efficiency. Al-Hassan (2023) proposed a comprehensive framework for sustainable local content policies in emerging economies, emphasizing the need to balance economic development, social inclusion, and environmental sustainability.

2.2.4 Relational Exchange Theory

Relational Exchange Theory, developed by Dyer and Singh (1998), argues that close buyer-supplier relationships can create relational rents—superior returns that cannot be achieved through arms-length transactions. The theory emphasizes the importance of trust, commitment, and collaboration in creating value through supply chain relationships.

- Application to This Study:

The IKTVA program fosters relational exchange by encouraging long-term partnerships between Saudi Aramco and its suppliers. Through joint initiatives, knowledge sharing, and performance monitoring, the program creates relational rents that benefit both parties.

- Critical Analysis:

While Relational Exchange Theory highlights the benefits of collaboration, it may overlook the costs and risks associated with close relationships, such as lock-in effects and reduced flexibility. This study examines how IKTVA balances collaboration with competition.

2.3 Saudi Vision 2030 and Localization Initiatives

2.3.1 Overview of Saudi Vision 2030

The main objective of Saudi Vision 2030 is to reduce the Kingdom's dependence on only oil revenue and to create a new source of revenue through a both diversified and clean and sustainable economy, all of that through a smart and intelligent representation for a comprehensive national transformation strategy (Saudi Vision 2030, 2016).

2.3.2 Localization as a Strategic Priority

Increasing the local content across various economic sectors is considered as one of the primary objectives of 2030 Vision of Saudi Arabia. What we meant by localization in a wider term, is to concentrate the initiative to encourage manufacturing domestically, improve the capabilities of workforce, create a backbone and strong support for small and medium-sized enterprises, and to have a great focus in attracting foreign investments which have a great contribute to the development of the national economic. Al-Khalifa (2024) examined the critical role of small and medium-sized enterprises (SMEs) in Saudi localization initiatives, finding that targeted support programs significantly enhance SME participation and contribution to local content goals.

Alsagheer and Al-Hassan (2023) examined the systems perspective of local content in Saudi Arabia, highlighting the interconnected nature of economic diversification, industrial development, and localization initiatives. The policies of localization are created in a way to strengthen supply chain resilience by reducing the dependent on both imported goods and services, and their direct delay in lead-time, controlled or uncontrolled due to dramatic global changes (Basahal et al., 2021).

In our current world, the energy sector has a vital role in supporting most of the objectives of localization. As Saudi Aramco considered the world largest energy company, it has implemented several smart and modern initiatives strategically to promote and encourage the idea of local content creating and to strengthen and support the capabilities of industry within the Kingdom. One of these great initiatives and proposals is the IKTVA program, which is a cornerstone of the Saudi Arabia strategic localization (Bohnenkamp et al., 2020).

Localization contributes to economic development through employment generation, industrial expansion, technology transfer, and increased investment opportunities. By continuing to create new opportunities for employment, putting clear guidelines and paths for supporting entrepreneurship ideas and projects, making the process of technology transfer easily and faster, all of that without forgetting to focus on industrial growth stimulate. As a result, by better understanding the effectiveness of localization programs and it is adding value, it is critical for a valid and correct evaluating for their positive contribution in sustaining national development.

While the Resource-Based View (RBV) clearly explains how much localization builds a competitive advantage, we need to acknowledge its boundaries and limitations. RBV focuses heavily and deeply on internal assets, which means it often loses the impact of outside forces like government shifts or market pressures. In Saudi Arabia, the success of the IKTVA Program relies on both sides: the internal skills of suppliers and external support from country stated policies. This study bridges and connects that gap by looking at how internal organizational strengths and external environmental factors work together to make IKTVA Program super successful and powerful.

From what I have seen in the energy sector, primary in the oil and gas industry, the most successful localization programs are those that deliver value for everyone involved, and to whom are directly and indirectly participating, not just and limitedly the company driving the initiative. Saudi

Aramco's IKTVA Program is a best example of this, as it aims to benefit the company, its suppliers, local employees, and the wider Saudi economy. Yet, stakeholder theory often operates on the idealized assumption that these diverse interests can easily align together and perfectly. In reality, conflicts are common. For instance, localization obligations can drive up short-term costs for suppliers, even if they promise long-term gains. This study looks directly at how IKTVA navigates and balances these competing pressures and to create best practice example to follow and to guide as well.

While Local Content Theory has heavily shaped policy, it definitely faces some valid criticism. A common argument among researchers is that localization policies can raise inefficiency by shielding and safeguarding domestic companies from global competition. The IKTVA Program tries to prevent this by embedding strict capability building and high-quality standards into its framework, but we still need to critically evaluate whether these local goals and objectives are being met at the expense of market competitiveness. My data analysis and evaluation aim to answer this exact question.

2.4 Saudi Aramco Overview

Saudi Arabian Oil Company (Saudi Aramco) is one of the largest integrated for both energy and chemicals companies, worldwide. Additionally, Saudi Aramco plays a significant and important role in developing the economy of the Kingdom of Saudi Arabia. Saudi Aramco was established as a national energy company, to contribute to a fully sustainable gross domestic product (GDP), industrial development as per the international standards, employment generation for the local nations, and to provide an excellent international competitiveness to the Kingdom of Saudi Arabia.

Saudi Aramco is a strategic partner in supporting Saudi Vision 2030, this is beyond its traditional role in the oil and gas sector. Saudi Aramco supporting the vision through various number of initiatives which are aimed to confirm diversifications in economic, local content development, perfection in technology transfer, and to enhance human capital. Saudi Aramco continuously invests in developing local industries and plays a great role in strengthening domestic supply chains to support short-term and long-term economic sustainability.

As part of its commitment to national development, Saudi Aramco successfully launched several successful localization initiatives, one of the greatest and most prominent of which is the In-

Kingdom Total Value Add (IKTVA) program. Through IKTVA, Saudi Aramco closely seeks to increase the participation of local content, strengthen supplier capabilities, encourage local manufacturing, and create sustainable value for economic within the Kingdom of Saudi Arabia. Consequently, Saudi Aramco perfectly provide an appropriate and exceptional organization context for examining the relationship between localization initiatives and outcomes of supply chain performance. Saudi Aramco plays a central role in supporting industrial development and local content initiatives through various strategic programs, including the In-Kingdom Total Value Add (IKTVA) program (Saudi Aramco, 2024).

2.5 The IKTVA Program: Development, Objectives and Strategic Role

2.5.1 Historical Background and Development

The In-Kingdom Total Value Add (IKTVA) program was successfully launched by Saudi Aramco in 2015 representing a strategic localization approved and supported initiatives designed specifically to increase local content, focused on strengthen domestic supply chains, closely support supplier development, smartly attract both local and international investment, and to ultimately contribute to achieve the objectives of Saudi Vision 2030. The IKTVA program serves as a master key mechanism for enhancing the participation of local economic while promoting and encouraging sustainable growth for industrial within the Kingdom of Saudi Arabia. The IKTVA program serves as the main mechanism in achieving the objectives behind localization, all of that, while having full alignment with Saudi Vision 2030.

Since its successful introduction in 2015, IKTVA has evolved into a comprehensive framework, that encourages suppliers and contractors aiming to increase and expand local investments and not to forget to strengthen their operational capabilities within the Kingdom of Saudi Arabia. Participating organizations are evaluated using a range of performance indicators that assess local procurement activities, workforce localization efforts, supplier development initiatives, research and development contributions, and investments in local manufacturing capabilities.

2.5.2 Primary Objectives of IKTVA

If we highlight the primary objectives of IKTVA, it will include the following:

- Increasing local content spending within the Kingdom.
- Supporting supplier development and capability enhancement.

- Creating sustainable employment opportunities.
- Encouraging technology transfer and innovation.
- Enhancing industrial competitiveness.
- Promoting sustainable economic growth and diversification.

It is important to mention that, through these objectives, IKTVA continuedly and ultimately seeks to establish a resilient and competitive supply chain ecosystem while keeping in mind to generate sustainable value for Saudi Aramco, suppliers who participate, and the economy at national level. As localization continues to play an important and vital role in Saudi Arabia's economic transformation agenda, that push all the organizations which are operating actively within the Saudi Aramco supply chain increasingly align their both operations and strategies with IKTVA clear and well identified and explained requirements. Consequently, the effectiveness of the IKTVA program can be perfectly evaluated through its influence on the performance of supply chain, supplier development, and local value creation, which represent the core listed and specified variables what are examined in this study.

By reviewing these objectives, it is clear that IKTVA seeking to establish a much more resilient and competitive supply chain, while generating both short and long-term value add for both Saudi Aramco and Saudi Arabia.

Nowadays, we can clearly notice the importance of the program, as organizations are seeking to align their operating and goals strategically with the localization requirements and to positively contribute to the Kingdom's economic agenda for transformation. Previous studies have highlighted the positive impact of localization policies on economic diversification, industrial competitiveness, and local supplier development (Basahal et al., 2021; Savio, 2021).

2.6 Supply Chain Performance

2.6.1 Definition and Dimensions

The ability of a certain and specific organization's supply chain to manage the flow of raw materials efficiently, the related information, and different resources from supplier to end user or customers, is what we mean by supply chain performance. Effective supply chain performance contributes significantly to organizational competitiveness, operational excellence, and customer satisfaction.

Several dimensions of supply chain performance were identified by different researchers, which include:

- Cost efficiency.
- Quality performance.
- Reliability in delivery.
- Flexibility in operations.
- Responsiveness to orders.
- Meeting Customer satisfaction.

Christopher and Peck (2004) argued that supply chain resilience is significantly enhanced through closer relationships with suppliers, which is a key objective of localization initiatives like IKTVA.

2.6.2 Impact of Localization on Supply Chain Performance

Normally, organizations who manage to reach a high level of supply chain performance are positioned better in responding to most frequent changes in market, can easily manage to reduce their operational costs, can achieve a higher quality service, and which result in maintaining sustainable competitive advantages.

Supply chain performance might be influenced by several factors such as supplier capabilities, availability of local sourcing, competencies of workforce, and collaboration between different supply chain partners. That can better lead to, evaluating the impact of IKTVA on supply chain performance is an essential for understanding the effectiveness of various strategies of localizations. Supply chain performance is commonly evaluated through measures such as efficiency, responsiveness, reliability, and cost effectiveness (Christopher, 2022; Chopra, 2023). Christopher (2024) extended the discussion on supply chain resilience in the post-pandemic era, arguing that localization is a critical strategy for building resilient supply chains capable of withstanding global disruptions. Supply chain performance might be influenced by several factors such as supplier capabilities, availability of local sourcing, competencies of workforce, and collaboration between different supply chain partners. That can better lead to, evaluating the impact of IKTVA on supply chain performance is essential for understanding the effectiveness of various strategies of localizations. Supply chain performance is commonly evaluated through

measures such as efficiency, responsiveness, reliability, and cost effectiveness (Christopher, 2022; Chopra, 2023).

2.7 Supplier Development

2.7.1 Definition and Importance

The process where the organizations work in a full collaborative way with their suppliers in a way to improve their capabilities, top up their performance, improve their quality standards, and to reach higher competitiveness, is what we called Suppliers Development. Currently, modern supply chain management, recognizing suppliers as strategic partners rather than just a normal transactional vendor.

2.7.2 Supplier Development Strategies

The activities for supplier development may include:

- Training programs.
- Technical assistance.
- Knowledge transfer.
- Performance monitoring.
- Technology support.
- Improvement joint initiatives.

If we concentrate on the primary goal of supplier development, then it will be clear to enhance both the supplier capabilities and to improve the performance of overall supply chain. Strong programs for supplier development can result in reducing operational risks, improving the quality of products, improving and increasing the innovations, and at most to have greater supply chain resilience.

If we focus within the IKTVA framework, we can notice that supplier development can represent a very important success factor because the objectives of localization depend on the ability of the domestic suppliers to meet both industry standards and to be able to effectively compete within global markets. Al-Turki (2022) examined supplier development in emerging economies, emphasizing the critical role of government and corporate initiatives in enhancing supplier capabilities and competitiveness.

By simply strengthening supplier capabilities, different organizations can easily achieve economic objectives and operational improvements. Supplier development practices are essential for improving supplier capabilities, quality performance, and long-term competitiveness within supply chain networks (Krause et al., 2021; Truong et al., 2021). Krause (2023) introduced the concept of Supplier Development 4.0, emphasizing the role of digital technologies such as AI, IoT, and big data analytics in enhancing supplier capabilities and performance monitoring. By simply strengthening supplier capabilities, different organizations can easily achieve economic objectives and operational improvements. Supplier development practices are essential for improving supplier capabilities, quality performance, and long-term competitiveness within supply chain networks (Krause et al., 2021; Truong et al., 2021).

2.8 Local Value Creation

2.8.1 Definition and Dimensions

If we highlight the total generated benefits in an industry, within a society and improving to the economy, within a specific geographic area through different business activities, various investment aspects, and multiple supply chain operation, then we are discussing the local value creation. Local value creation is a fundamental objective for the initiatives in localization, simply because it can contribute directly to the goals of national development. Porter and Kramer (2022) extended the concept of shared value creation to sustainable economic development, arguing that organizations can create economic value while simultaneously addressing social and environmental needs.

Mentioning key dimensions of local value creation will include the following:

- Generation for employment.
- Generation for diversification in economics.
- Generation for development in multiple industries.
- Generation for a continues and secured knowledge transfer.
- Generation for a continued advancement in technology.
- Generation for an increased trust in local investment.

Within the Saudi Arabian context, local value creation plays a critical role in achieving the objectives of Vision 2030. Focusing on IKTVA program, among other programs, can show us,

how it seeks to put more efforts to maximize the benefits of economic retained within Saudi Arabia, by mainly encouraging procurements domestically, manufacturing locally, and having a continues development into the local and nation workforce.

To know how effective the localization programs is, we often can measure them by simply, their ability to generate a sustainable local value while miniating the competitiveness of the organizations and effectively operate them.

As a result, by evaluating the IKTVA contribution into the local value creation, representing a significant component of the current research. Local value creation extends beyond financial benefits and includes employment generation, technology transfer, knowledge development, and economic sustainability (Porter & Kramer, 2019; Freeman, 2020).

2.9 Review of Previous Studies

It was clearly noted that among multiple previous studies they have limitedly examined the impact of localization policies, practices for supply chain management, initiatives for developing suppliers, and diversification economic programs.

It was observed that research generally showed that localization initiatives contributed positively to generate employment, industrial development, and growth for economic. Additionally, several studies demonstrated that supplier development programs can improve supplier capabilities, performance for operations, and efficiency of supply chain.

It was mentioned by other researchers the importance of collaboration between both suppliers and organizations in achieving sustainable performance in supply chain. An effective supplier programs for development have been linked with enhanced quality performance, innovation, and competitive advantages. Al-Shammari and Al-Dossary (2023) provided empirical evidence on supply chain resilience and localization in the GCC context, demonstrating how localization enhances operational continuity and competitiveness.

Rarely have studies specifically examined the strategic impact of IKTVA on supply chain performance, supplier development, and local value creation simultaneously. Existing literature addressing these variables separately, which clearly create a wide gap in understanding their combined relationships with specifically the Saudi Aramco ecosystem.

Previous studies have generally reported positive outcomes associated with localization initiatives and supplier development programs. However, differences exist regarding the scope of analysis, methodological approaches, and industry contexts. While some studies focused on macroeconomic outcomes such as employment generation and economic diversification, others examined operational outcomes including supply chain efficiency and supplier capability enhancement. These differences highlight the need for a comprehensive examination of IKTVA within the Saudi Aramco ecosystem. El-Khalil and Farah (2020) found that localization requirements in the UAE oil and gas sector led to significant improvements in supply chain efficiency and operational performance.

Table 2: Table 2: Summary of Selected Previous Studies

Author(s)	Year	Study Focus	Methodology	Key Findings
Basahal et al.	2021	Localization policies in Saudi Arabia	Quantitative	Localization initiatives positively supported industrial development and economic growth.
Savio	2021	IKTVA and Saudi Vision 2030	Qualitative	IKTVA contributes to economic diversification and local content enhancement.
Bohnenkamp et al.	2020	Supply chain localization	Mixed Methods	Localization strengthens supply chain resilience and operational continuity.
Truong et al.	2021	Supplier development programs	Quantitative	Supplier development improves supplier capabilities and performance outcomes.
Khan et al.	2022	Supply chain performance	Quantitative	Strong supplier collaboration improves operational efficiency and responsiveness.
Alotaibi	2022	Localization initiatives in Saudi Arabia	Qualitative	Local content initiatives support employment creation and industrial growth.
Alqahtani & Ahmed	2023	Local value creation	Quantitative	Local value creation contributes positively to national competitiveness and sustainability.
Alharbi et al.	2023	Supplier capability development	Quantitative	Supplier development initiatives enhance competitiveness and innovation performance.

Table 2 presents a summary of selected previous studies relevant to localization initiatives, supply chain performance, supplier development, and local value creation. The reviewed studies play an important role by providing the foundation for understanding the relationships among the variables examined in the current research. Al-Fawzan (2020) compared local content policies across different contexts, highlighting the importance of tailored approaches to localization.

The group of different studies which are presented in table 2, collectively demonstrate that localization initiatives, supplier development programs, and supply chain performance improvement efforts contribute positively to both organization and economic outcomes. While research previously has examined these variables individually, a very low number, or very limited studies have investigated their interrelationships within the context of the IKTVA program. In particular, there is clearly insufficient empirical evidence examining how IKTVA influences supply chain performance, supplier development, and local value creation, all simultaneously, within the Saudi Aramco ecosystem. As per this limitation, it has provided the basis for the current study and highlights its potential contribution to the existing body of knowledge. Stevens (2003) examined the resource curse phenomenon, arguing that effective local content policies are essential for resource-rich countries to capture economic value. Kojima (2019) provided a critical assessment of local content policies, identifying challenges in implementation and the need for continuous improvement.

By closely looking at past research, there is a clear divide in how localization is studied and reviewed. Most papers look strictly at macroeconomic metrics like GDP and employment, while others focus purely on operational performance like supply chain efficiency. Al-Turki (2022) examined supplier development in emerging economies, demonstrating the importance of corporate initiatives in enhancing supplier capabilities. So, it is quite clear that they rarely look at both together. This split makes it incredibly difficult to evaluate the true corporate and economic return of these initiatives fully and in the right way, comprehensively and as expected. My study addresses this gap by analyzing operational and economic outcomes together under a single framework, by offering a much more complete assessment and evaluation of how the IKTVA Program actually performs on the ground. Porter and Kramer (2022) extended the concept of shared value creation to sustainable economic development, providing a framework for understanding how organizations can create economic value while addressing social needs.

2.10 Synthesis of Literature

The literature which was reviewed in this chapter focuses on the continues growing for the importance of localization initiatives to support economic diversification, industrial development, and supply chain resilience. By reviewing previous studies, they have consistently demonstrated that by using and implementing the local content programs, it can contribute positively to organizational performance, enhance the supplier capabilities, and develop national economic. Within the Saudi Arabia context, Saudi Vision 2030 has played a great role by further emphasized the high importance of localization as a strategic priority for achieving continues productive and sustainable growth and by reducing in the other hand , the dependency level on external resources, because of unstable global economic, that can affect negatively the economics of Saudi Arabia.

The review additionally indicates that the supplier development initiatives play such a significant and important role in improving operational efficiency, improving quality performance, which can be both related to quality of products or services as well, improving innovation capabilities, and long-term competitiveness. By following the same way, research on supply chain suggests that by strengthening the supplier relationships and by increasing local participation both can positively contribute to greater flexibility, ensure to have a faster responsiveness, and resilience in supply chain operations.

Although several studies have examined localization policies, practices of supply chain management, and initiatives of supplier development, separately, limited or no attention has been given to the combined impact of the In-Kingdom Total Value Add (IKTVA) program on supply chain performance, supplier development, and local value creation. Moreover, limited empirical evidence focused specifically on the Saudi Aramco supply chain ecosystem.

Therefore, the current study seeks to address this gap by providing an integrated assessment of how the IKTVA program contributed to organizational and economic outcomes. All the findings are expected to contribute to both academic knowledge and decision-making practically, regarding localization initiatives within Saudi Arabia. These findings collectively support the development of the proposed conceptual framework and the formulation of the study hypotheses.

2.11 Research Gap

A detailed review of the existing literature shows several important gaps that clearly justify the high demanded need for the current study. First, limited empirical research has successfully examined the effectiveness of the In-Kingdom Total Value Add (IKTVA) program from the perspective of supply chain stakeholders operating within the Saudi Aramco ecosystem (Khan et al., 2022).

Second, while majority of previous studies have primarily focused on the macroeconomic outcomes of localization initiatives, such as economic diversification, employment generation, and industrial development, it gave minimal attention to both organization and operational impacts.

Third, there is not enough research which investigates the relationship between IKTVA implementations, supply chain performance, supplier development, and local value creation within a single integrated theoretical framework. Most current existing studies have examined these variables independently rather than exploring their interrelationships.

Finally, a very limited number of exists evidence in regard to how these factors are interacting within Saudi Aramco's supply chain environment and can contribute to the achievement of localization objectives. Consequently, this study seeks to address these gaps by providing empirical evidence on the strategic impact of IKTVA and identifying opportunities for enhancing supply chain performance, supplier development, and local value creation.

Kojima (2019) identified gaps in the implementation of local content policies, highlighting the need for empirical evidence on the effectiveness of localization initiatives. Based on the clearly highlighted and identified research gaps, the current study proposes an integrated framework to examine the relationship between IKTVA implementation and three key outcome variables; supply chain performance, supplier development, and local value creation. Al-Turki (2022) noted the limited empirical research on supplier development in emerging economies, which is a gap that this study addresses. The conceptual framework presented in the following section illustrates and clearly explains the proposed relationships among these previously mentioned variables. Despite the growing body of literature on localization and supply chain management, limited empirical research has investigated the relationship between IKTVA implementation, supply chain performance, supplier development, and local value creation within a unified framework (Basahal

et al., 2021; Khan et al., 2022). The identified gaps demonstrate the need for an integrated empirical investigation within the Saudi Aramco supply chain ecosystem. Accordingly, this study helps develop a conceptual framework that integrates IKTVA implementation, supply chain performance, supplier development, and local value creation within a single analytical model. This approach extends existing literature by examining the relationships among these variables simultaneously rather than independently, which adds value for the study and provides more valuable inputs for both readers and academic research.

Through working in the field, it is impossible to ignore the footprint of the IKTVA Program across the Saudi energy sector, yet there is a noticeable absence of any systematic data measuring its real impact in the energy sector generally and in the oil and gas business lines specifically. While professionals frequently debate the program's outcomes speculatively, these discussions clearly lack the empirical weight needed to draw real conclusions and to be able to reflect truth. This study brings hard data to the table. By delivering a rigorous, evidence-based evaluation, this research aims to move the conversation past boardroom opinions and to provide actionable insights for both academic literature and corporate strategy as well.

2.12 Conceptual Framework

The conceptual framework for this study proposes that the effectiveness of IKTVA initiatives have a positive influence on supply chain performance, supplier development, and local value creation. That was based on the literature review and theoretical foundations.

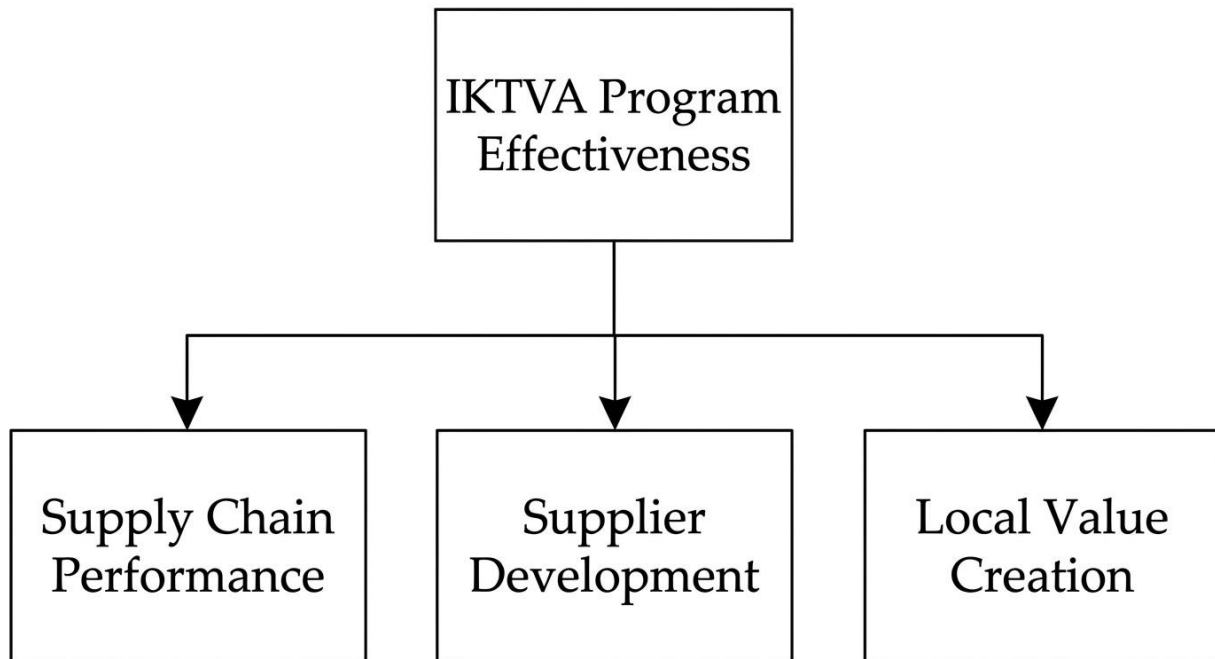


Figure 1: Conceptual Framework of the Study

Source: Developed by the Researcher (2026), adapted from Freeman (2020), Barney et al. (2021), and Basahal et al. (2021).

This framework assumes that the successful implementation of IKTVA initiatives will contribute positively to improving operational performance, having stronger capabilities for supplier, and greater benefits on local economic. The previously mentioned relationship will be empirically tested through a quantitative analysis, using data collected from surveys which is collected from participants involved in the ecosystem of Saudi Aramco supply chain.

2.13 Chapter Summary

This chapter reviewed the literature related to Saudi Vision 2030, localization initiatives, the IKTVA program, supply chain performance, supplier development, and local value creation. It also discussed the theoretical foundations of the study, reviewed previous research, identified the research gap, and presented the conceptual framework that guides the study.

3. CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter we will discuss and present the research methodology which is adopted to achieve all the objectives associated with this study. As per that the chapter clearly explain with details the research approach, the design of the research, the approximate target population, the sampling procedure, the methods for data collection, the design for questionnaire, both validity and reliability measures, the consideration for ethics, and the statistical techniques which is used for data analysis. The main purpose of this methodology is to provide a systematic framework, which is used for evaluating the strategic impact of the In-Kingdom Total Value Add (IKTVA) program on supply chain performance, supplier development, and local value creation within the Saudi Aramco ecosystem.

As designing the methodology required balancing academic precision with real-world execution. The goal was to build a research design that yields reliability and dependable, using valid data while remaining realistic to implement within the scope of an MBA project. The resulting approach adapts established research methods directly to the specific realities of the Saudi Aramco ecosystem, by ensuring the findings are both theoretically sound and practically relevant.

3.2 Research Philosophy

3.2.1 Overview of Research Philosophy

If we need to explain the research philosophy, then, we need to include all the beliefs and listed assumptions that both guide the research process and can influence all the methods used in data collections and data analysis. This study adopts a positivism research philosophy style, because it emphasizes measurement for objectives, quantitative analysis, and empirical investigation for the relationships among the selected variables.

If we need to explain why the positivist approach is the appropriate selection for this research, then we must mention the following. The study seeks to examine a measurable relationship between IKTVA implementation, supply chain performance, supplier development, and local value creation using statistical analysis techniques.

In business operations, perceived performance rarely matches actual performance. As what normally stakeholders believe about an initiative's success often disconnects from what the data shows. One lesson I have learned throughout my career is that perception and reality often diverge.

People may believe a program is effective based on intuition or anecdotal evidence, but the data may tell a different story. This is precisely why I chose a positivist philosophy for this study. By relying on objective measurement and statistical analysis, I can move beyond subjective opinions and provide evidence-based insights into the true impact of the IKTVA Program. This reality directly informs the choice of a positivist philosophy for this study. By relying on objective measurement and statistical analysis makes it possible to look at past subjective opinions and provide a strong and more accurate evidence-based insight into the true impact of the IKTVA Program.

Table 3: Overview of Research Philosophy

Philosophy	Ontology	Epistemology	Methodology
Positivism	Objective reality	Empirical observation	Quantitative
Interpretivism	Subjective reality	Interpretation	Qualitative
Pragmatism	Mixed reality	Practical solutions	Mixed methods
Realism	Critical reality	Multiple perspectives	Mixed methods

3.2.2 Positivism

This study is adopting a positivist research philosophy, which is basically based on the belief that reality is objective and can be clearly measured through empirical observation and quantitative methods. Positivism emphasizes:

1. Ontological Assumption: Reality is objective and exists independently and separately from human perception.
2. Epistemological Assumption: Knowledge is derived from empirical observation and reflections and measurement.
3. Methodological Assumption: Quantitative methods are appropriate and applicable for data collection, gathering, and analysis.

3.2.3 Justification for Positivism

The positivist philosophy selection and application are appropriate for this study for the following thoughts and reasons:

- Objective Measurement: As the study aims to measure the impact of the IKTVA Program on three dependent variables using quantifiable data. The positivist approach facilitates objective measurement through both tools, structured questionnaires and statistical analysis.

- Hypothesis Testing: As the study has clearly defined hypotheses that can be tested empirically. Positivism allows and permits for the testing of these hypotheses using statistical methods, for example regression analysis.
- Generalizability: As the positivist approach enables the findings to be generalized and comprehensives to the broader and wider population within the Saudi Aramco ecosystem.
- Previous Studies: As many previous studies on supply chain performance, supplier development, and local content programs have adopted a positivist approach, which noticeably allows for comparison and integration of findings.

One lesson I have learned throughout my career is that perception and reality often diverge. People may believe a program is effective based on intuition or anecdotal evidence, but the data may tell a different story. This is precisely why I chose a positivist philosophy for this study. By relying on objective measurement and statistical analysis, I can move beyond subjective opinions and provide evidence-based insights into the true impact of the IKTVA Program.

3.3 Research Approach

3.3.1 Deductive Approach

In this study, we need to mention that it implements a **deductive research approach**. Where the deductive approach begins with selected existing theories and concepts which are derived fully from previous literature and develops a determined hypothesis which can be tested empirically using quantitative data (Creswell & Creswell, 2023).

To mention why the deductive approach is suitable for this study, we have to highlight that as the study seeks to test predefined hypotheses regarding the relationship between both IKTVA implementation and the outcomes of organizational performance.

The Deductive Process:

- Theory: By starting with existing theories (RBV, Stakeholder Theory, Local Content Theory)
- Hypotheses: By developing testable hypotheses based on theory
- Data Collection: By collecting and gathering data to test hypotheses
- Analysis: By analyzing data and information to confirm or reject hypotheses
- Confirmation: By confirming or modifying theory based on findings

3.3.2 Justification for Deductive Approach

Creswell and Creswell (2023) described the deductive approach as appropriate for studies testing predefined hypotheses derived from theory, which justified the research approach used in this study. The selection of deductive approach is suitable and best fit for this study for the following reasons:

- Hypothesis Testing: The study seeks to test and proof predefined hypotheses regarding the relationship between IKTVA implementation and organizational performance outcomes.
- Theory-Driven: The study is guided by established theoretical frameworks and supports that provides a clear basis for hypothesis development.
- Quantitative Focus: The deductive approach aligns and lines up well with quantitative methods.
- Generalizability: The deductive approach enables and allows the findings to be generalized.

3.4 Research Design

3.4.1 Cross-Sectional Survey Design

This study clearly employs a quantitative cross-sectional research design.

The main purpose of selecting a quantitative design, as it enables the collection of data, which is collected numerically from many participants, additionally it allows to apply statistical analysis of relationships among multiple variables (Babbie, 2016).. What involved in cross-sectional design is data collected at a single point of time from different respondents who are directly involved in Saudi Aramco's supply chain ecosystem. Quantitative research designs are widely used to examine relationships among variables and test research hypotheses (Creswell & Creswell, 2023; Sekaran & Bougie, 2020).

Key Features:

- Single Point in Time: Data is collected once, rather than over an extended period.
- Large Sample: A relatively large sample is used to ensure representativeness.
- Surveys: Questionnaires are the primary data collection tools.

3.4.2 Justification for Cross-Sectional Design

Why we can say that this design is appropriate, as it facilitates efficient collection of data while providing sufficient information to evaluate the research selected hypotheses. Babbie (2016) described cross-sectional survey design as appropriate for collecting data at a single point in time, which was adopted for this study.

As per the above explanations and comments, the cross-sectional survey design is appropriate for this study for the following reasons:

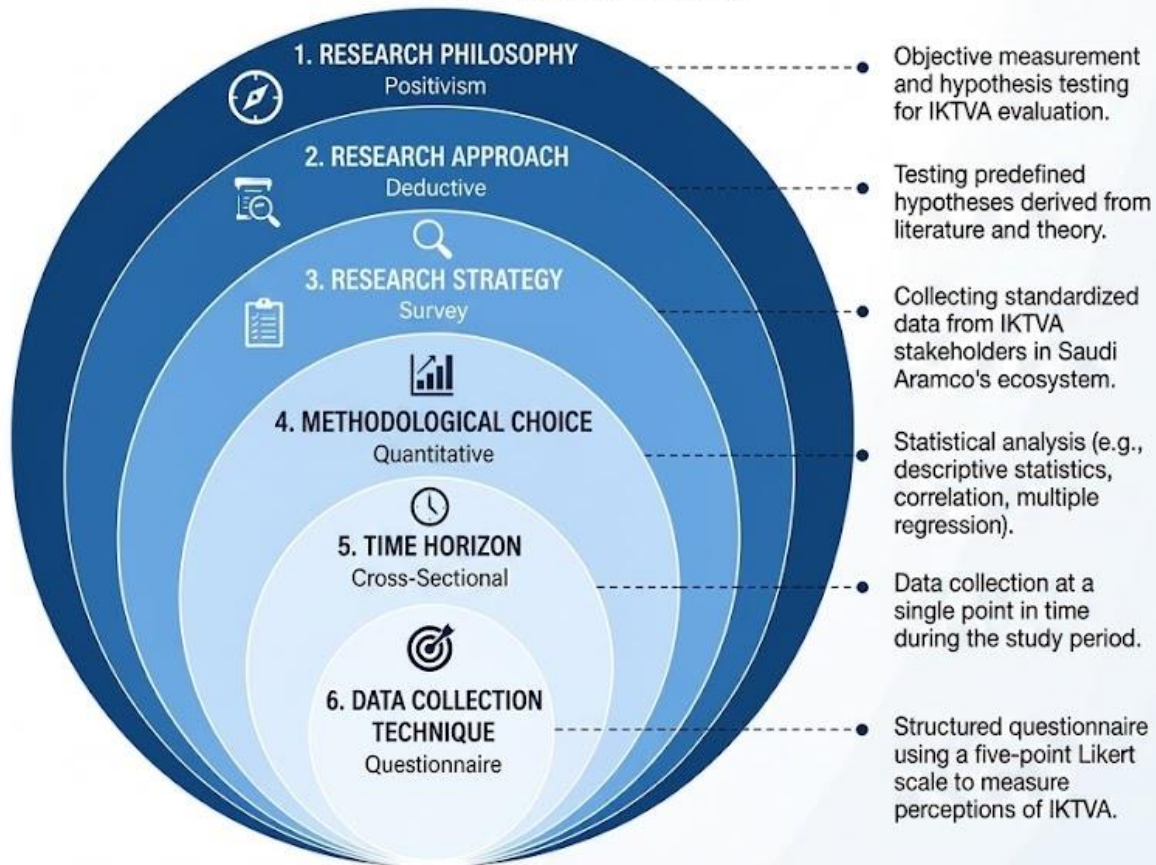
- Time and Resource Constraints: As the study is conducted within the timeframe of an MBA dissertation.
- Relationship Examination: The study aims to examine relationships between variables.
- Established Validity: Cross-sectional surveys are widely accepted in business research.
- Accessibility: As the target population is accessible through online surveys.

3.5 Research Onion Framework

The Research Onion Framework, which was developed by Saunders, Lewis, and Thornhill (2019) provides a clear structured approach for selecting appropriate methodologies research. The framework presents the different methodological layers that guide the research process, that include research philosophy, approach, strategy, methodological choice and selection, time horizon, and data collection techniques. Saunders, Lewis, and Thornhill (2019) developed the Research Onion Framework, which provided the methodological structure for this study. The methodological choices adopted in this study are consistent with the Research Onion Framework proposed by Saunders et al. (2019). The current study adopts the methodological choices illustrated in Figure 2.

RESEARCH ONION FRAMEWORK

(Adapted for Current Study)



Source: Adapted from Saunders, Lewis, and Thornhill (2019)

1. Research Philosophy	The study adopts a positivist research philosophy, focusing on objective measurement and hypothesis testing to evaluate the effectiveness of IKTVA initiatives and their impact on organizational and economic outcomes.
2. Research Approach	A deductive approach is used because the study aims to test predefined hypotheses derived from the literature review and theoretical foundations.
3. Research Strategy	A survey strategy is appropriate for collecting standardized data from a large number of respondents representing different stakeholder groups within Saudi Aramco's supply chain ecosystem.
4. Methodological Choice	A quantitative methodology is selected to allow the use of statistical techniques such as descriptive statistics, correlation analysis, and multiple regression analysis.
5. Time Horizon	A cross-sectional design is adopted as the data will be collected at a single point in time during the study period.
6. Data Collection Technique	Primary data will be collected through a structured questionnaire using a five-point Likert scale to measure the perceptions of respondents regarding IKTVA implementation and its outcomes.



The **Research Onion Framework** provides a clear methodological structure that guides the design and implementation of this study, ensuring that the research is conducted in a systematic, rigorous, and academically sound manner.

Figure 2: Research Onion Framework Adapted for the Current Study

Source: Adapted from Saunders, Lewis, and Thornhill (2019).

The Research Onion Framework provides an academic structured approach for selecting and aligning research methodologies. As illustrated in Figure 2, the outer layer represents research philosophy, where a positivist perspective is adopted to facilitate objective measurement and statistical examination of the relationships among the study highlighted variables. The study follows a deductive approach because it seeks to test and examine hypotheses developed from the literature review and theoretical foundations. A strategical survey is employed through a comprehensive structured questionnaire, which distributed to respondents within Saudi Aramco's supply chain ecosystem. The methodological choice is quantitative which better enabling the application of statistical techniques to best examine the relationships among the selected variables. A cross-sectional time horizon is adopted because the data collection will be at a single point in time. Finally, questionnaires are used as the primary data collection instrument in gathering information from the selected sample. The framework demonstrates the alignment and arrangement between the study's philosophical stance, research approach, methodological choices, and data collection procedures. For further details of each methodological layer are presented in the following section.

- **Research Philosophy**

This study adopts a positivist research philosophy because it focuses on objective measurement, hypothesis testing, and statistical examination of the relationships among the study variables. The positivist approach is appropriate because the study seeks to evaluate measurable relationships between IKTVA implementation, supply chain performance, supplier development, and local value creation through quantitative methods.

- **Research Approach**

A deductive approach will be adopted because the study seeks to test predefined hypotheses which are derived from the literature review.

- **Research Strategy**

The study will employ a survey strategy using a structured questionnaire administered to the group of participants within the Saudi Aramco supply chain ecosystem. The survey instrument is specifically designed to collect quantitative data regarding IKTVA Program Effectiveness, Supply

Chain Performance, Supplier Development and Local Value Creation. A copy of the questionnaire is provided in the Appendix at the end of the study report for reference.

- **Methodological Choice**

The study follows a quantitative methodology to facilitate statistical analysis of the relationships among the study defined variables.

- **Time Horizon**

A cross-sectional time horizon will be adopted because data will be collected at a single point in time.

- **Data Collection**

Primary data will be collected through questionnaires which are distributed to groups of participants, that include employees, suppliers, and stakeholders involved in IKTVA-related activities.

3.6 Research Population and Sampling

3.6.1 Target Population

The population who are targeted consist of a group of individuals who are directly involved in supply chain and the activities of localization, which are associated with Saudi Aramco and IKTVA program.

- The population of this study includes:
- Employees from Saudi Aramco.
- Professionals in supply chain.
- Specialists in procurement.
- Professionals in contracting.
- Representatives for suppliers.
- Vendor management personnel.
- IKTVA stakeholders.

Professionals in industry, who are involved in localization initiatives.

All these groups of participants possess relevant levels of both knowledge and expertise regarding the implementation of IKTVA and its impact on the performance of organizations.

The target population for this study comprises and involves professionals within the Saudi Aramco ecosystem who are specifically involved in or knowledgeable and experienced about the IKTVA Program. This includes:

Table 4: Target Population

Category	Description
Saudi Aramco Employees	Professionals in Supply Chain, Procurement, Contracting, Engineering, Quality, and Vendor Management
Contractors	Organizations providing goods and services subject to IKTVA requirements
Suppliers	Organizations supplying materials, equipment, and services
Service Providers	Organizations providing specialized services
Government Entities	Government organizations involved in local content initiatives

3.6.2 Sampling Frame

The sampling frame was constructed and created using:

- Professional networks (LinkedIn and other platforms)
- Industry associations (SAGIA, Saudi Council of Chambers)
- Company directories (Saudi Aramco and its contractors)
- Email databases (professional email lists)

3.6.3 Sampling Technique

In this study we are utilizing purposive sampling.

Simply we can define purposive sampling as a non-probability sampling technique in which all the participants will be selected based on their knowledge, level of experience, and their level of involvement in the subject being investigated. Patton (2015) justified purposive sampling for studies requiring respondents with specific knowledge and experience, which was the sampling strategy used in this study.

We believe this is an appropriate technique, because this study requires respondents who possess and have a certain practical understanding about the implementation of IKTVA, operations used in supply chain, normal activities used for supplier development, and knowledge about value creation initiatives. Purposive sampling is particularly suitable because respondents must possess direct knowledge and practical experience related to IKTVA implementation and supply chain activities.

For participant selection it is totally relied on leveraging established professional networks within the Saudi energy sector. Reaching out directly to industry contacts, corporate partners, and professional associations made it possible to target individuals with direct, hands-on experience with the initiative of the IKTVA Program. This careful sampling strategy ensured the respondents possessed and acquired the specific operational expertise, which is required to provide high-quality, high-utility data for the questionnaire. At the end their feedback will be more trustfully and expected to have higher reflection on the research, as planned. Which will more controlled help in filling the gap and enrich the academic and strategical studies.

In summary as the study employs a **purposive sampling technique**, as per the below extra details.

Selection Criteria:

- **Professional Experience:** To have at least 5 years in the Saudi Aramco ecosystem
- **IKTVA Knowledge:** To be familiar with the IKTVA Program and its objectives
- **Direct Involvement:** To be directly or indirectly involved in IKTVA-related activities
- **Role:** In a position providing comprehensive understanding of supply chain operations and practices

Justification for Purposive Sampling:

- **Knowledgeable Respondents:** The study requires and demands respondents with specific knowledge.
- **Targeted Data Collection:** The study focuses targeted and on a specific and particular population.
- **Efficiency:** Purposive sampling is efficient and effective in terms of time and resources.

Patton (2015) described purposive sampling as appropriate for studies requiring respondents with specific knowledge and experience, which justified the sampling strategy for this study.

3.7 Sample Size Determination

What we mean by sample size is the total number of participants selected for the study among the overall target population. Hair et al. (2022) recommended a sample size exceeding 150 respondents for testing relationships among multiple variables using regression techniques, which validated the sample size of 200 used in this study.

In this study, we are targeting approximately 200 respondents who will be pursued. The minimum number of acceptances will be 150 respondents. The proposed sample size is consistent with recommendations for quantitative research and exceeds the minimum sample size commonly suggested for correlation and multiple regression analyses. According to Hair et al. (2022), a sample exceeding 150 respondents is generally considered adequate for testing relationships among multiple variables using regression techniques (Hair et al., 2022).

We believe the proposed sample size is adequate for quantitative research, and it supports reliable statistical analysis using SPSS. Moreover, the proposed sample size exceeds the minimum requirements which are commonly recommended for correlation and regression analysis. Tabachnick and Fidell (2013) recommended a minimum sample size of $50 + 8m$ for multiple regression analysis, which informed the sample size determination for this study.

What we are planning to have the distribution of respondents to include employees, managers, specialists, suppliers, and other stakeholders involved in Saudi Aramco's supply chain ecosystem. Hair et al. (2022) recommended that sample sizes exceeding 150 respondents are generally adequate for testing relationships among multiple variables, which validated the sample size of 200 used in this study. Tabachnick and Fidell (2013) recommended a minimum sample size of $50 + 8m$ for multiple regression analysis, which was exceeded by the 200 respondents in this study.

The sample size was determined using the following considerations:

1. **Statistical Power:** According to Tabachnick and Fidell (2013), the minimum sample size for multiple regression analysis is $50 + 8m$, where m is the number of independent variables. With one independent variable, the minimum sample size is 58.

2. Response Rate: Considering potential non-response, the study aimed to collect at least 200 valid responses.
3. Previous Studies: Previous studies on similar topics have used sample sizes ranging from 150 to 300 respondents.

Final Sample Size: 200 valid responses

3.8 Sources of Data

The study will utilize both primary and secondary data sources. Primary data will be collected through a structured questionnaire which will be distributed to employees, suppliers, contractors, and stakeholders who are associated with the Saudi Aramco supply chain ecosystem. Secondary data will be obtained from academic journals, books, conference proceedings, industry reports, Saudi Aramco publications, and Saudi Vision 2030 documents relevant to localization and supply chain management. In this study we will utilize primary and secondary sources of data simultaneously.

3.8.1 Primary Data

For primary data it will be collected through structured questionnaire which is distributed to the group of individual participants within the target population.

The distributed questionnaire will provide direct insights into the perception of respondents regarding:

- IKTVA implementation.
- Supply chain performance.
- Supplier development.
- Local value creation.

3.8.2 Secondary Data

Regarding secondary data, it will be obtained from:

- Academic journals.
- Collection of published books.
- Conference papers.
- Government publications.

- Saudi Vision 2030 documents.
- Saudi Aramco publications.
- Mixed industry reports.
- Previous research studies.

The main purpose of secondary sources is to provide support to the literature review and to provide a strong theoretical foundation for the study.

3.9 Research Instrument

3.9.1 Questionnaire Development

The questionnaire was developed based on an extensive review of the literature. The development process involved:

- Literature Review: Identifying key dimensions and measurement items for each construct.
- Item Generation: Generating items adapted from validated scales used in previous studies.
- Expert Review: Reviewing by academic supervisors and industry experts.
- Pilot Study: Testing with 20 professionals to assess clarity and relevance.

Walliman (2021) noted that structured questionnaires are among the most widely used instruments for collecting quantitative data in business and management research.

3.9.2 Questionnaire Structure

We are using structured questionnaires as a primary research instrument for this study. We made sure and confirmed that the questionnaire has been designed to collect and gather quantitative data which is related to research variables and hypotheses.

The questionnaire items were adapted from previous studies related to localization initiatives, supply chain performance, supplier development, and local value creation, with modifications to suit the context of the IKTVA program and the Saudi Aramco supply chain ecosystem.

In order to understand the questionnaire better, it was designed to consist of five sections:

Table 5: Questionnaire Structure

Section	Number of Questions	Purpose
Section 1: Participant Consent	1	Confirm voluntary participation
Section A: Demographic Information	8	Profile respondents
Section B: IKTVA Program Effectiveness	10	Measure independent variable
Section C: Supply Chain Performance	10	Measure dependent variable 1
Section D: Supplier Development	10	Measure dependent variable 2
Section E: Local Value Creation	10	Measure dependent variable 3
Total	49	

Structured questionnaires remain one of the most widely used instruments for collecting quantitative data in business and management research (Walliman, 2021).

3.9.3 Measurement Scales

While designing the questionnaire, we used a **5-point Likert scale**, as below:

Table 6: Five-Point Likert Scale

Scale	Meaning
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Likert (1932) developed the 5-point scale that has become widely used in survey research, which was adopted for measuring respondents' perceptions in this study.

3.9.4 Pilot Study

Prior to the process of data collection, a pilot study planned to be conducted using a small group of approximately 15 to 20 participants who possess characteristics like theses of the targeted population. The main purpose of the pilot study is to assess all the following, the clarity, relevance, and comprehensibility of the questionnaire items and to identify clearly any ambiguities or difficulties that may affect respondents; understanding and blocking his complete participation on

the shared questionnaire. Pilot testing assists researchers in evaluating the clarity, relevance, and reliability of questionnaire items before full-scale data collection (Creswell & Creswell, 2023).

The feedback collected which will be obtained from the pilot participants will be used to refine the wording, sequence, and structure of the questionnaire where necessary and adding value. In addition, the pilot study will provide an initial assessment of the reliability of the measurement instrument before its full and final administration.

Conducting a pilot test is expected to improve the overall quality of the research instrument, enhance the accuracy of data, and increase the likelihood of obtaining reliable responses during the main survey. Any modifications resulting from the pilot study will be incorporated before final version of the questionnaire is distributed to the final sample of the team participants in the survey.

As developing the questionnaire required balancing granular program metrics with clear, accessible phrasing. It was clearly noticed that the pilot study proved critical to this process. The collected feedback from the pilot cohort allowed for a strategic improvement of the questionnaire's structure and wording. A key takeaway from this phase was the necessity of stripping away dense academic terminology, and to ensure that every question directly resonated with the respondents' day-to-day operational realities, which mean, more realistic, than just academic, with no connectivity with the operational side, of the IKTVA Program.

In summary, A pilot study was conducted with 20 professionals, who are working within the Saudi Aramco ecosystem to:

- **Test Clarity:** Assess the clarity and comprehensibility of the questionnaire items.
- **Identify Issues:** To help in Identifying any issues with wording, formatting, or response options.
- **Assess Time:** To help in estimating the time required to complete the questionnaire.
- **Refine Instrument:** To help and guide in making necessary refinements based on feedback.
- **Results:** By implementing carefully the above guidelines , the questionnaire was clear, relevant, and took approximately 8-10 minutes to complete.

Participants involved in the pilot study will not be included in the final survey sample.

3.10 Data Collection Procedures

The process of data collection will involve the following steps:

- Obtain approval from the academic supervisor.
- Finalize the questionnaire.
- Conduct a pilot review if required.
- Distribute the questionnaire electronically.
- Collect completed responses.
- Verify data completeness.
- Code responses for statistical analysis.
- Enter data into SPSS software.
- Conduct statistical analysis.
- Interpret and report findings.

Resnik (2020) emphasized that ethical principles such as informed consent, confidentiality, and voluntary participation are fundamental to maintaining research integrity.

3.10.1 Distribution Method

The verified and approved questionnaire was distributed electronically using **Google Forms** for the following reasons:

- **Efficiency:** To fully allow for efficient distribution and collection of responses.
- **Accessibility:** As the platform is accessible and easy to use.
- **Data Management:** As per setup, it fully automatically compiles responses into a structured dataset.
- **Anonymity:** It is completely allowing for anonymous responses, reducing social desirability bias.

3.10.2 Distribution Channels

- **Email:** It was distributed through direct emails with a link to the questionnaire.
- **Professional Networks:** We have used networks like, LinkedIn and other professional platforms.

- **Industry Associations:** The listed questionnaire was fully distribution through professional groups.

3.10.3 Response Rate

Table 7: Response Rate

Aspect	Detail
Number of completed surveys	201
Invalid/Trial responses removed	1
Valid responses	200
Estimated population contacted	500
Response Rate	40%

3.11 Data Analysis Techniques

In this study we are planning to analyze the collected data using the Statistical Package for the Social Sciences (SPSS). Sekaran and Bougie (2020) provided guidelines for interpreting Cronbach's Alpha values and correlation coefficients, which were used in this study.

The following analytical techniques will be employed:

3.11.1 Data Screening and Preparation

For data screening and preparation, we have followed the guidelines below:

- Missing Data Assessment: Checking for missing values.
- Duplicate Check: Scanning for duplicate entries.
- Data Coding: Coding data numerically for SPSS analysis.
- Outlier Detection: Identifying and addressing outliers.

3.11.2 Descriptive Statistics

Descriptive Statistics will play a great role in summarizing respondent characteristics and research variables through:

- Means and Standard Deviations: Summarize responses.
- Frequencies and Percentages: Profile respondents.
- Pattern Identification: Identify trends in the data.

3.11.3 Reliability Analysis (Cronbach's Alpha)

Reliability analysis will be conducted using Cronbach's Alpha coefficient to assess the internal consistency of the questionnaire items. A Cronbach's Alpha value of 0.70 or above will be considered acceptable for this study (Sekaran & Bougie, 2020).

Interpretation of Cronbach's Alpha can be found as below:

Table 8: Interpretation of Cronbach's Alpha

Alpha Value	Interpretation
$\alpha > 0.90$	Excellent
$0.80 < \alpha \leq 0.90$	Good
$0.70 < \alpha \leq 0.80$	Acceptable
$\alpha \leq 0.70$	Poor

3.11.4 Validity of the Instrument

If we need to define validity, then it is the extent to which the questionnaire measures accurately the intended research variables. Kaiser (1974) established the KMO measure criteria, where values above 0.90 are considered 'marvelous' and indicate excellent sampling adequacy for factor analysis.

In order to ensure validity of content, we need to confirm the following:

- The questionnaire will need to be developed based on existing literature, not on something that does not exist.
- We need to confirm that survey items are aligned with objectives of the research.
- The questionnaire will need to be reviewed by subject matter experts and an academic supervisor as well, if needed.
- We need to confirm that the feedback received during the review process will be fully incorporated and integrated prior to data collection.

By applying these procedures, we can make sure it will enhance not only the accuracy, but also the relevance of the measurement instrument. Face validity and content validity will be assessed through expert review.

In summary, the Assessment Criteria are:

1. **KMO Measure:** > 0.70 indicates adequate sampling.
2. **Bartlett's Test:** $p < 0.05$ indicates sufficient correlation.
3. **Factor Loadings:** > 0.70 indicates significant loading.

3.11.5 Correlation Analysis (Pearson Correlation)

Correlation Analysis will be conducted using the Pearson Correlation Coefficient. This is to examine the strength and direction of the relationships among the selected study variables. Specifically, the analysis will assess the relationships between IKTVA Program Effectiveness, Supply Chain Performance, Supplier Development, and Local Value Creation. The results will help determine whether statistically significant associations exist among these variables and will provide preliminary and primary evidence regarding the proposed research hypotheses. Correlation coefficients (r) will be interpreted based on their magnitude and direction, with values ranging from -1 to $+1$. While positive values indicate a direct relationship between variables, negative values indicate the opposite, an inverse relationship. The significance level will be evaluated at $p \leq 0.05$.

Table 9: Interpretation of Correlation Coefficients

Correlation Coefficient (r)	Interpretation
0.00 – 0.19	Very Weak
0.20 – 0.39	Weak
0.40 – 0.59	Moderate
0.60 – 0.79	Strong
0.80 – 1.00	Very Strong

Source: Adapted from Sekaran and Bougie (2020).

In summary, for the interpretation of Correlation Coefficients are summarized in the below table:

Table 10: Interpretation of Correlation Coefficients

r Value	Interpretation
$r > 0.70$	Strong positive correlation
$0.50 \leq r \leq 0.70$	Moderate positive correlation
$0.30 \leq r < 0.50$	Weak positive correlation
$r < 0.30$	No correlation

3.11.6 Regression Analysis (Multiple Linear Regression)

Model Equations:

- Model 1: $SCP = \beta_0 + \beta_1(IKTVA) + \varepsilon$
- Model 2: $SD = \beta_0 + \beta_1(IKTVA) + \varepsilon$
- Model 3: $LVC = \beta_0 + \beta_1(IKTVA) + \varepsilon$

Assessment Criteria:

1. **R-squared (R^2):** Proportion of variance explained.
2. **ANOVA (F-test):** Overall significance of the model.
3. **Standardized Beta (β):** Strength and direction of the relationship.
4. **p-value:** Statistical significance of the predictor.
5. **VIF and Tolerance:** Multicollinearity diagnostics.

3.11.7 Statistical Software (SPSS)

All analyses will be conducted using **IBM SPSS Statistics (Version 26.0)**.

3.11.8 Multiple Regression Analysis

The main advantages of using Multiple Regression Analysis will be to evaluate the effect of IKTVA Program Effectiveness on Supply Chain Performance, Supplier Development, and Local Value Creation. Adding to that, Regression analysis will help determine the predictive power of the independent variable and help to assess the statistical significance of the proposed hypotheses. The analysis shall include the coefficient of determination (R^2), standardized beta coefficients, t-values, and significance levels (p-values). The findings and outputs will provide empirical evidence regarding the extent to which IKTVA contributes to organizational and economic outcomes within the Saudi Aramco ecosystem.

To evaluate the impact of IKTVTA implementation, we will use multiple regression analysis on:

- Supply chain performance.
- Supplier development.
- Local value creation.

To determine the strength and significance of these relationships, we will use the Regression analysis.

3.12 Validity and Reliability

3.12.1 Internal Validity

To ensure internal validity:

1. Control Variables: Demographic variables used as controls.
2. Standardized Instrument: Questionnaire standardized for consistency.
3. Clear Instructions: Respondents provided with clear instructions.

3.12.2 External Validity

To ensure external validity:

1. Representative Sample: Sample drawn from various organizations.
2. Adequate Sample Size: Sample size of 200 is adequate.
3. Comprehensive Sampling Frame: Covered a wide range of professionals.

3.12.3 Construct Validity

To ensure construct validity:

1. Exploratory Factor Analysis: Confirm factor structure.
2. Literature-based Items: Items derived from literature.
3. Expert Review: Questionnaire reviewed by experts.

3.12.4 Reliability

To ensure reliability:

1. Cronbach's Alpha: High values (>0.70) confirm internal consistency.
2. Pilot Study: Confirmed clarity and consistency.

3.12.5 Reliability of the Instrument

We can easily define reliability as the consistency and stability of the results of the measurement.

The questionnaire's reliability can be assessed using Cronbach's Alpha coefficient. Nunnally and Bernstein (1994) established the threshold of Cronbach's Alpha ≥ 0.70 as acceptable for research purposes, which was used to assess questionnaire reliability.

The interpretation of Cronbach's Alpha values will be as follows:

Table 11: Interpretation of Cronbach's Alpha Values

Alpha Value	Interpretation
0.90 and above	Excellent
0.80 – 0.89	Good
0.70 – 0.79	Acceptable
Below 0.70	Requires Improvement

Minimum value of Cronbach's Alpha will be considered as acceptable for this study. Reliability refers to the consistency and stability of a measurement instrument over time and across respondents (Sekaran & Bougie, 2020). A Cronbach's Alpha coefficient of 0.70 or higher will be considered acceptable for this study.

3.13 Assumption Testing

Prior to conducting correlation and regression analyses, we will examine several statistical assumptions. These will include normality, linearity, multicollinearity, homoscedasticity, and independence of errors. Normality will be assessed by using skewness and kurtosis values, while multicollinearity will be examined through Variance Inflation Factor (VIF) and Tolerance values. By ensuring that these assumptions are met will improve the validity and reliability of the statistical results.

3.13.1 Assumptions of Statistical Analysis

As the study assuming that all respondents are providing accurate and honest responses, it is also assumed that all the collected data meets all the requirements for statistical analysis, including but not limited, normality, linearity, and independence of observations. The importance of these assumptions is that it supports the validity of the statistical procedures which are used to test the research hypotheses.

3.14 Ethical Considerations

In this study we will make sure to make it comply with the principles of the recognized research ethics. Resnik (2020) emphasized that ethical principles such as informed consent, confidentiality, and voluntary participation are fundamental to maintaining research integrity and protecting participants. In order to do that, the following ethical measures will be implemented:

- Participation will be voluntary.
- Respondents will provide informed consent.
- Confidentiality will be maintained.
- Personal information will not be disclosed.
- Responses will be used solely for academic purposes.
- Participants may withdraw at any time.
- Data will be securely stored and protected.

In order to protect commercial sensitive information, which is associated with both Saudi Aramco and suppliers who participates, a special attention will be given and to confirm it is not leaked out. Ethical principles such as informed consent, confidentiality, and voluntary participation are fundamental to maintaining research integrity and protecting participants (Resnik, 2020; APA, 2020).

3.14.1 Informed Consent

All respondents were informed about the purpose of the study and their rights. Consent was confirmed before proceeding.

3.14.2 Anonymity and Confidentiality

No personally identifiable information was collected. Data was stored securely and used only for academic purposes.

3.14.3 Voluntary Participation

Participation was entirely voluntary. Respondents could withdraw at any time before submission.

3.14.4 Data Protection

Data was stored securely. Access was restricted to the researcher and supervisors.

3.15 Research Model

This study proposes the following research model:

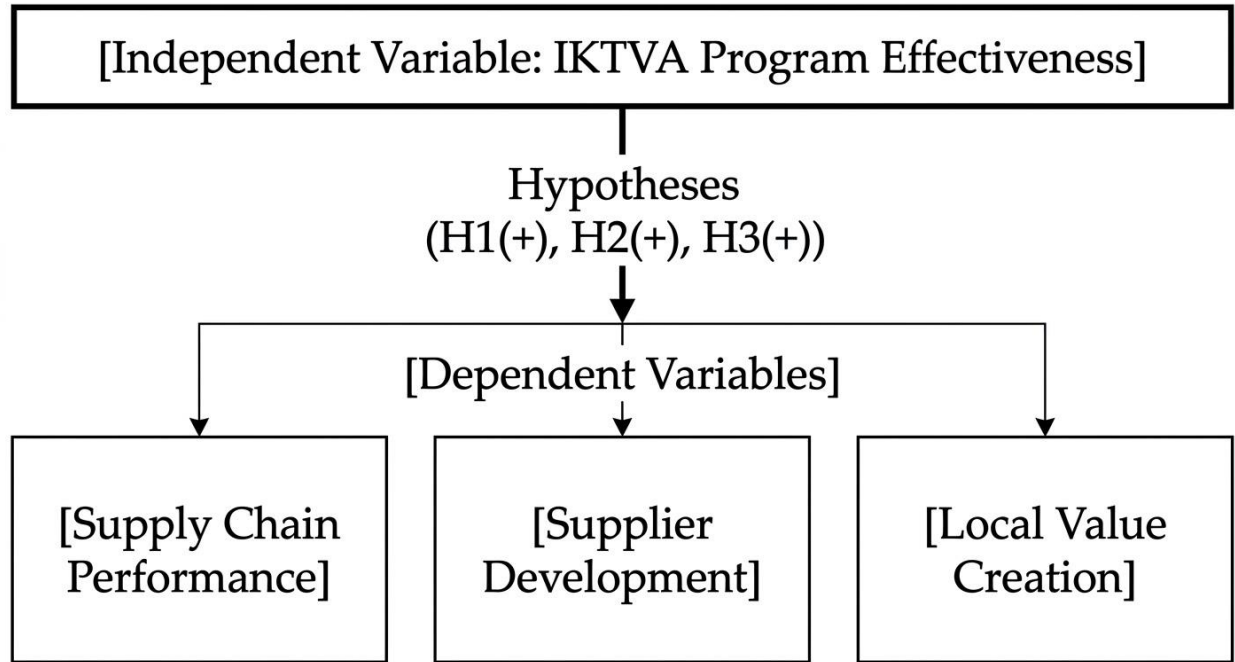


Figure 3: Proposed Research Model

Source: Developed by the Researcher (2026) , adapted from Freeman (2020), Barney et al. (2021), and Basahal et al. (2021).

Table 12: Research Variables and Hypotheses

Hypothesis	Independent Variable	Dependent Variable
H1	IKTVA Program Effectiveness	Supply Chain Performance
H2	IKTVA Program Effectiveness	Supplier Development
H3	IKTVA Program Effectiveness	Local Value Creation

This model assuming that IKTVA is implemented effectively and that it is influencing positively both economic and organizational outcomes within Saudi Aramco’s supply chain ecosystem.

3.16 Operational Definition of Variables

Table 13: Operational Definition of Variables

Variable	Definition	Measurement
IKTVA Program Effectiveness	Perceived effectiveness of localization initiatives implemented through IKTVA	10 questionnaire items (5-point Likert scale)
Supply Chain Performance	Efficiency and effectiveness of supply chain operations	10 questionnaire items (5-point Likert scale)
Supplier Development	Improvement of supplier capabilities and competencies	10 questionnaire items (5-point Likert scale)
Local Value Creation	Economic and industrial value generated within Saudi Arabia	10 questionnaire items (5-point Likert scale)

3.17 Research Timeline

The research activities will be conducted according to the timeline presented in Figure 4. The schedule outlines the major stages of the study, including proposal development, literature review, data collection, data analysis, report writing, and final submission.

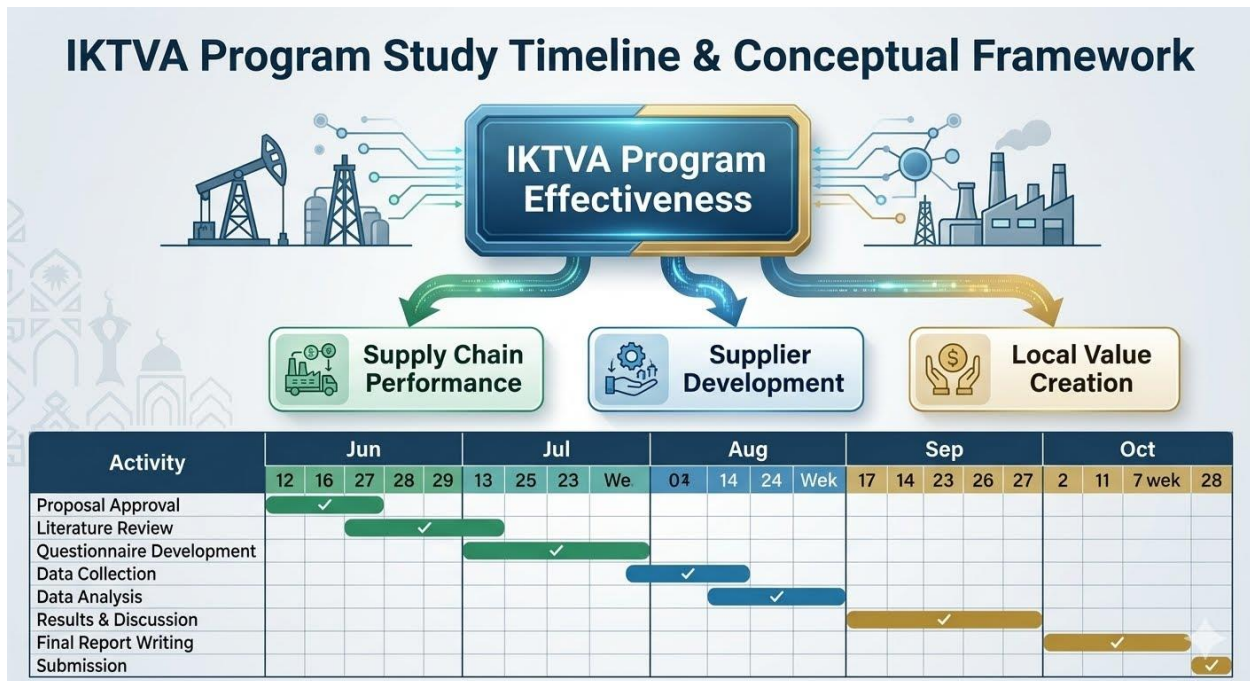


Figure 4: Research Timeline (Gantt Chart)

Source: Developed by the Researcher (2026)

3.18 Chapter Summary

To summarize this chapter, it is clearly presented the methodology, which was adopted for the study, including the research philosophy, research approach, research design, population and sampling techniques, collection methods for data, research instrument, validity and reliability procedures, ethical considerations, and techniques for statistical analysis.

A systematic framework was provided by the methodology, to investigate the strategic impact of IKTVA on supply chain performance, supplier development, and local value creation. In the subsequent chapters we will present the collected data with their analysis, and we will discuss the findings in relation to the research agreed objectives and set-up hypotheses.

This chapter has presented the comprehensive examination research methodology which was successfully employed in this study. The study adopts a positivist philosophy and a quantitative approach, using a cross-sectional survey design. Data will be collected from 200 professionals within the Saudi Aramco ecosystem through using a well-structured questionnaire. The data will be analyzed using SPSS, with statistical techniques including descriptive statistics, reliability analysis, factor analysis, correlation analysis, and multiple regression analysis. At the end, the chapter has also addressed ethical considerations and acknowledged the limitations of the methodology.

4. CHAPTER FOUR: DATA ANALYSIS AND RESULTS

4.1 Introduction

This chapter mainly presents the overall comprehensive statistical data analysis conducted to provide a full evaluation for the strategic impact of the In-Kingdom Total Value Add (IKTVA) Program on supply chain performance, supplier development, and local value creation within the Saudi Aramco ecosystem. As per academic perspective and preference, the analysis employs IBM SPSS Statistics and is structured to address the research objectives through testing the previously proposed hypotheses. The chapter begins with data screening procedures, followed by descriptive analysis of respondents' demographics, reliability and validity assessment, correlation analysis, and multiple regression analysis to test the three main hypotheses. The findings are systematically presented through figures and tables and supplemented by using academic interpretations.

4.2 Data Screening and Preparation

Before the main statistical analyses were conducted, the dataset experienced careful data screening to ensure its quality and suitability for analysis. Hair et al. (2014) recommended a minimum of 5 observations per variable, with 10 observations per variable being more desirable, which was satisfied with 200 respondents and 40 questionnaire items.

4.2.1 Data Collection Overview

Google Forms was used to build up and make the questionnaire which was after which electronically distributed to professionals' teams within the Saudi Aramco ecosystem, including employees of Saudi Aramco, contractors, suppliers, service providers, and government entities. The target population comprised individuals who are both directly involved with the IKTVA Program or indirectly.

Table 14: Data Screening Summary

Aspect	Result
Initial Responses Collected	201
Invalid/Trial Responses Removed	1
Final Valid Sample Size	200
Missing Data Assessment	None
Duplicate Entries Check	None
Data Coding	Complete

4.2.2 Data Cleaning Procedures

For the data cleaning process, we have taken the following steps:

1. Trial Response Removal: The first response, which appeared to be a test submission for the questionnaire, was removed from the dataset.

2. **Missing Value Assessment:** By applying a complete and thorough review, it was clearly confirmed that no missing values existed, as all questions were mandatory selected option in the design of Google Form.
3. **Duplicate Check:** The dataset was scanned for any duplicate entries based on timestamp (Time of Recording / Time of Collection) and patterns of response; none were found.
4. **Data Coding:** All responses were coded numerically for the purpose of SPSS analysis. For the 5-point Likert scale items, the coding was as follows: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5. Similarly, for demographic variables, they were coded using appropriate categorical values.

4.2.3 Suitability of the Dataset

The final sample size of 200 valid responses exceeds the minimum requirements for the sample sizes, for the statistical tests employed in this study. Based on the rule of thumb for multiple regression analysis (Tabachnick & Fidell, 2013), a minimum of $50 + 8m$ cases (where m = number of independent variables) is recommended. In our case, with one independent variable in this study, the minimum requirements are 58 cases; as per that, the sample of 200 is more than adequate. Additionally, Hair et al. (2014) recommended a minimum of 5 observations per variable, with 10 observations per variable being more desirable. By further evaluating our case, with a total of 40 questionnaire items and a total of 200 respondents, the ratio of 5:1 is clearly matched and satisfied. Tabachnick and Fidell (2013) provided the rule of thumb for multiple regression analysis sample size ($50 + 8m$), which was satisfied with 200 respondents.

Conclusion: the dataset is clean, complete, and suitable for all planned statistical analysis of this study.

4.3 Respondent Demographic Profile

In this section we are presenting the demographic characteristics of the surveyed respondents. By understanding the profile of the respondents as it is essential for contextualizing the output findings and for better assessing the representativeness of the sample.

Table 15: Frequency and Percentage Distribution of Respondent Demographics

Variable	Category	Frequency	Percentage
A1 Gender	Male	132	66.0%
	Female	68	34.0%
A2 Nationality	Saudi	170	85.0%
	Non-Saudi	30	15.0%
A2.1 IKTVA Familiarity	Yes	200	100.0%
	No	0	0.0%
A2.2 IKTVA Involvement	Directly involved	184	92.0%
	Indirectly involved	16	8.0%
	Aware but not involved	0	0.0%
A3 Age Group	Less than 25 years	0	0.0%
	25–34 years	24	12.0%
	35–44 years	67	33.5%
	45–54 years	60	30.0%
	55 years and above	49	24.5%
A4 Highest Qualification	Bachelor's	113	56.5%
	Master's	74	37.0%
	Doctorate	13	6.5%
A5 Organization Type	Saudi Aramco	88	44.0%
	Contractor	38	19.0%
	Supplier	33	16.5%
	Service Provider	25	12.5%
	Government Entity	16	8.0%
A6 Position	Executive	35	17.5%
	Manager	70	35.0%
	Supervisor/Coordinator	34	17.0%
	Specialist	40	20.0%
	Engineer	21	10.5%
A7 Years of Experience	Less than 5 years	0	0.0%
	5–10 years	40	20.0%
	11–15 years	58	29.0%
	16–20 years	41	20.5%
	More than 20 years	61	30.5%
A8 Functional Area	Engineering	24	12.0%
	Quality	14	7.0%
	Supply Chain	42	21.0%
	Procurement	51	25.5%
	Contracting	28	14.0%
	Vendor Management	27	13.5%
	Operations	14	7.0%

Table 16: Gender Distribution of Respondents

Category	Percentage	Degrees
Male	66%	238°
Female	34%	122°

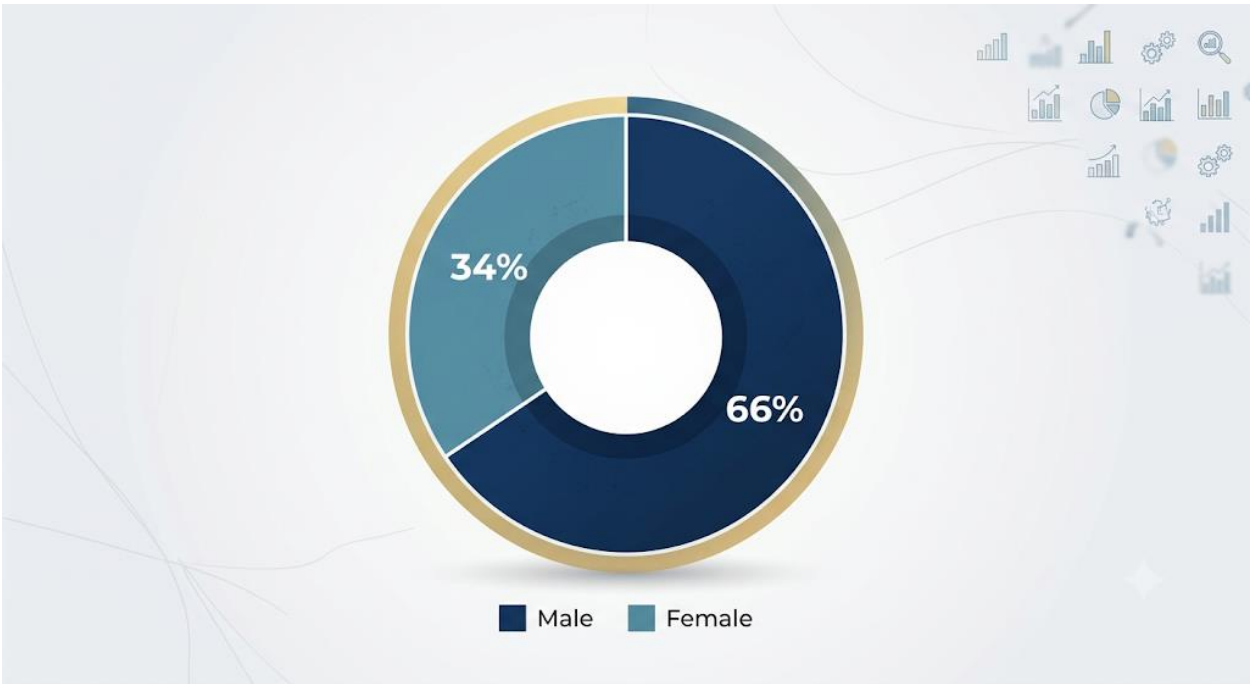


Figure 5: Gender Distribution of Respondents

Interpretation: The gender distribution shows that the majority of respondents were male (66%), which reflects the traditional gender composition of the Saudi oil and gas industry.

Table 17: Nationality Distribution of Respondents

Category	Percentage	Degrees
Saudi	85%	306°
Non-Saudi	15%	54°

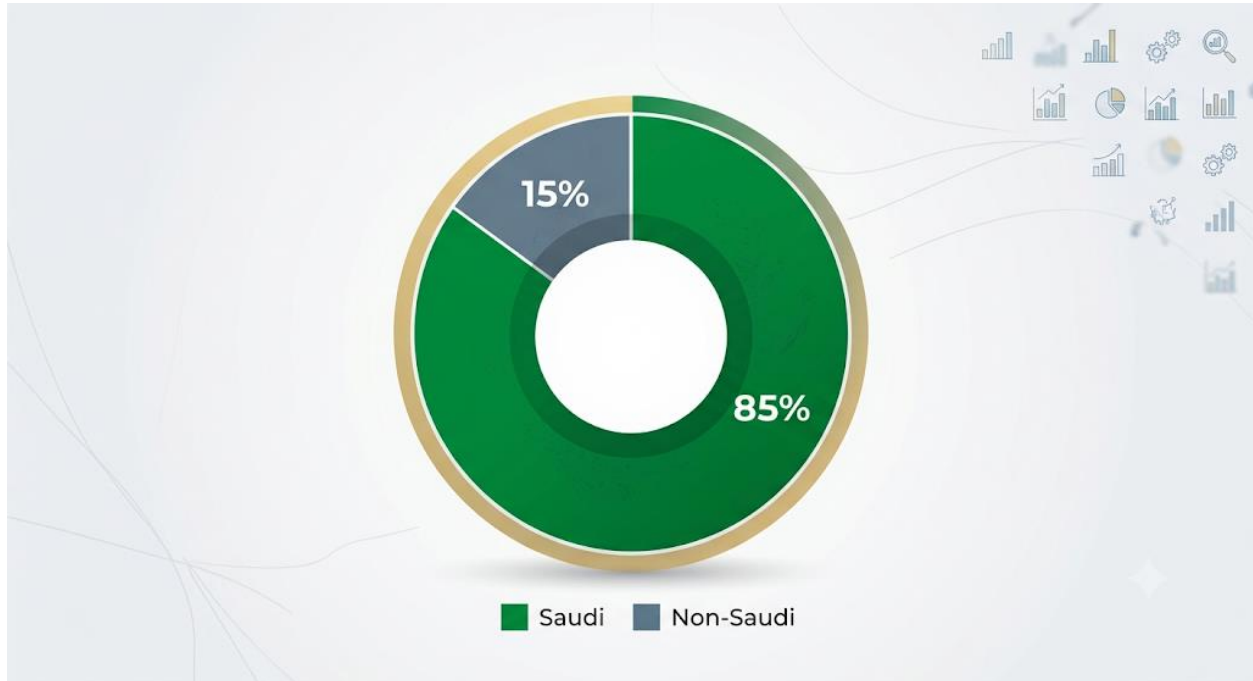


Figure 6: Nationality Distribution of Respondents

Interpretation: The nationality distribution shows that Saudi nationals constituted the majority (85%), which is consistent with the Saudization policies of Saudi Aramco and the Kingdom's Vision 2030 objectives.

Table 18: Age Group Distribution of Respondents

Age Group	Frequency	Percentage
25-34 years	24	12.0%
35-44 years	67	33.5%
45-54 years	60	30.0%
55+ years	49	24.5%

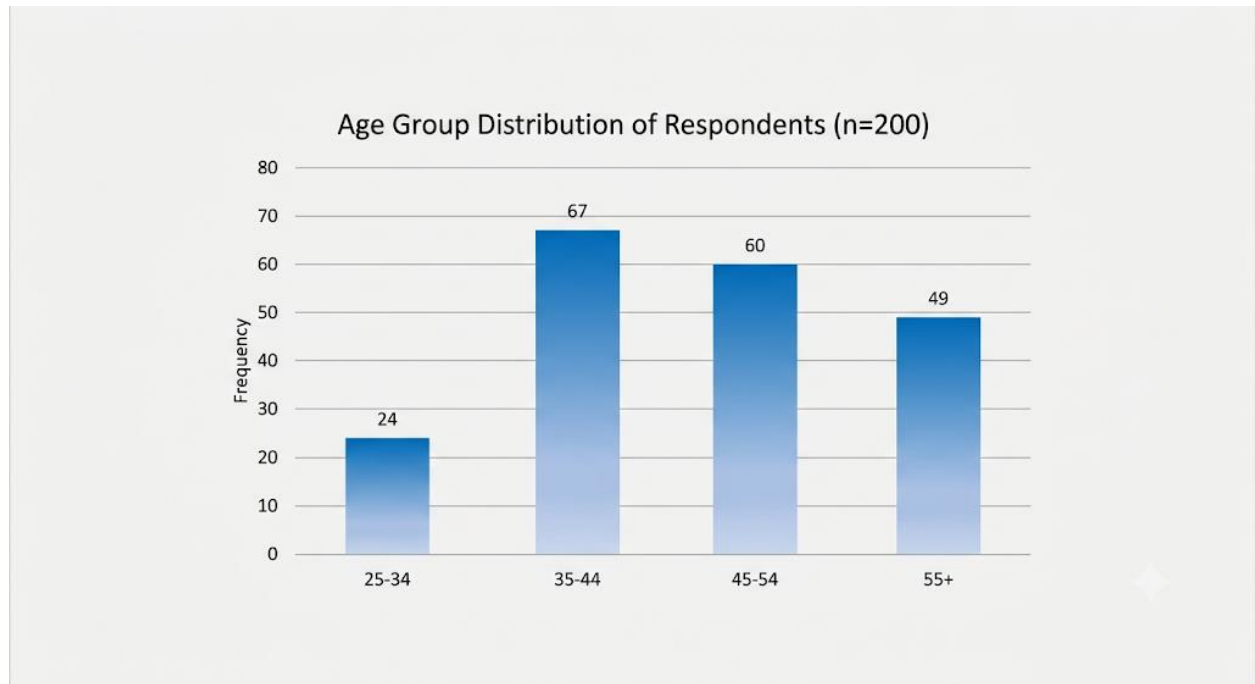


Figure 7: Age Group Distribution of Respondents

Interpretation: The age distribution reveals that 87.5% of respondents are aged 35 years or above, with the largest group being 35-44 years (33.5%). This indicates that the respondents are highly experienced professionals.

Table 19: Organization Type Distribution of Respondents

Organization Type	Frequency	Percentage
Saudi Aramco	88	44.0%
Contractor	38	19.0%
Supplier	33	16.5%
Service Provider	25	12.5%
Government Entity	16	8.0%

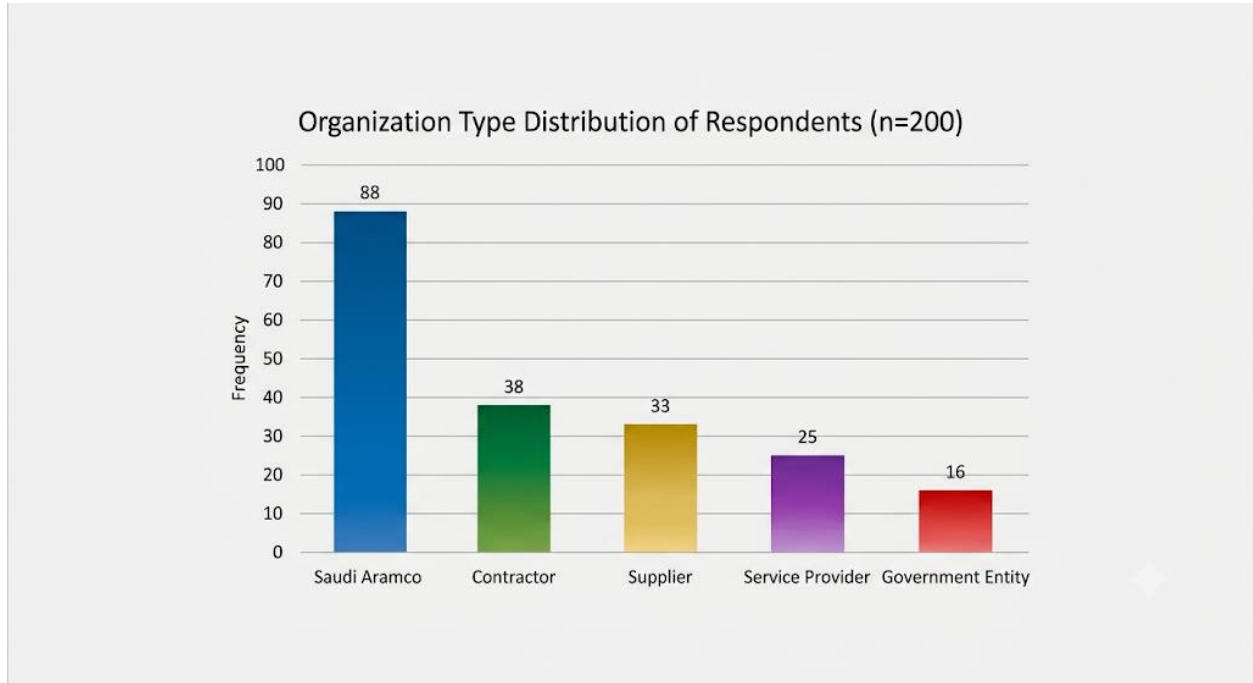


Figure 8: Organization Type Distribution of Respondents

Interpretation: The largest group of respondents comes from Saudi Aramco (44%), which is appropriate as the program is a Saudi Aramco initiative. The inclusion of contractors, suppliers, service providers, and government entities ensures a comprehensive view of the entire ecosystem.

Table 20: Position Distribution of Respondents

Position	Frequency	Percentage
Manager	70	35.0%
Specialist	40	20.0%
Executive	35	17.5%
Supervisor/Coordinator	34	17.0%
Engineer	21	10.5%

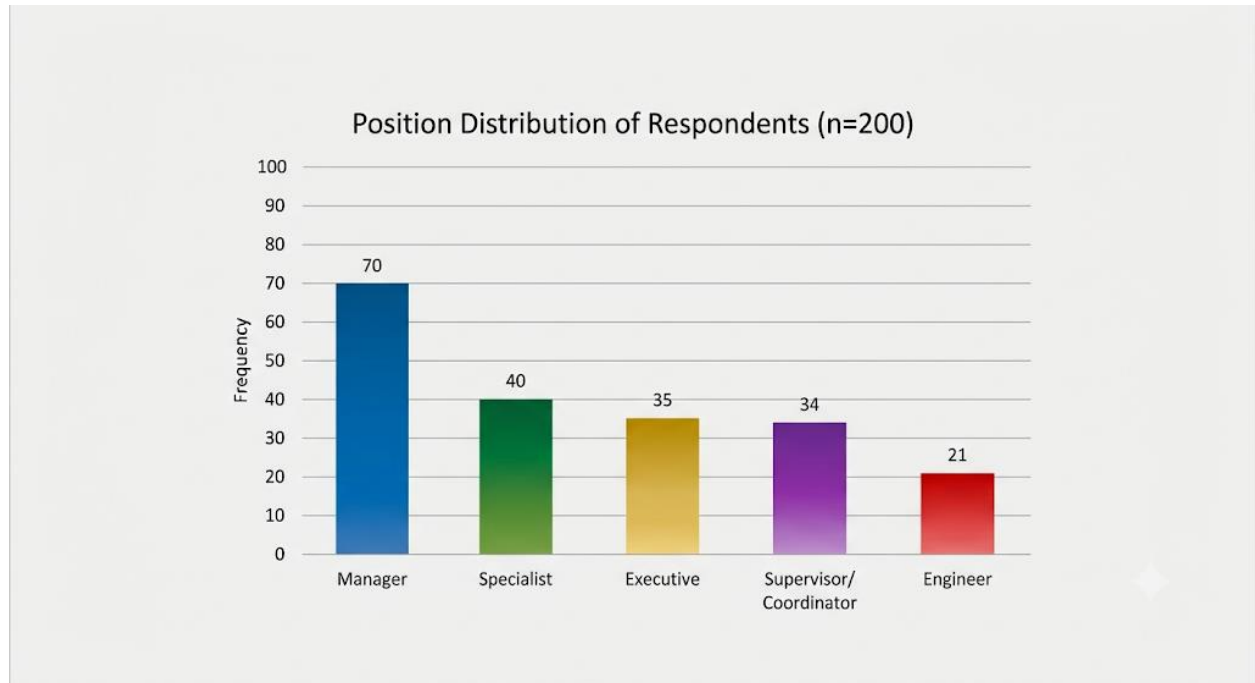


Figure 9: Position Distribution of Respondents

Interpretation: The sample is heavily weighted towards managerial and specialist positions (55%), providing valuable senior-level perspectives on the IKTVA Program.

Table 21: Years of Experience Distribution

Experience	Frequency	Percentage
5-10 years	40	20.0%
11-15 years	58	29.0%
16-20 years	41	20.5%
More than 20 years	61	30.5%

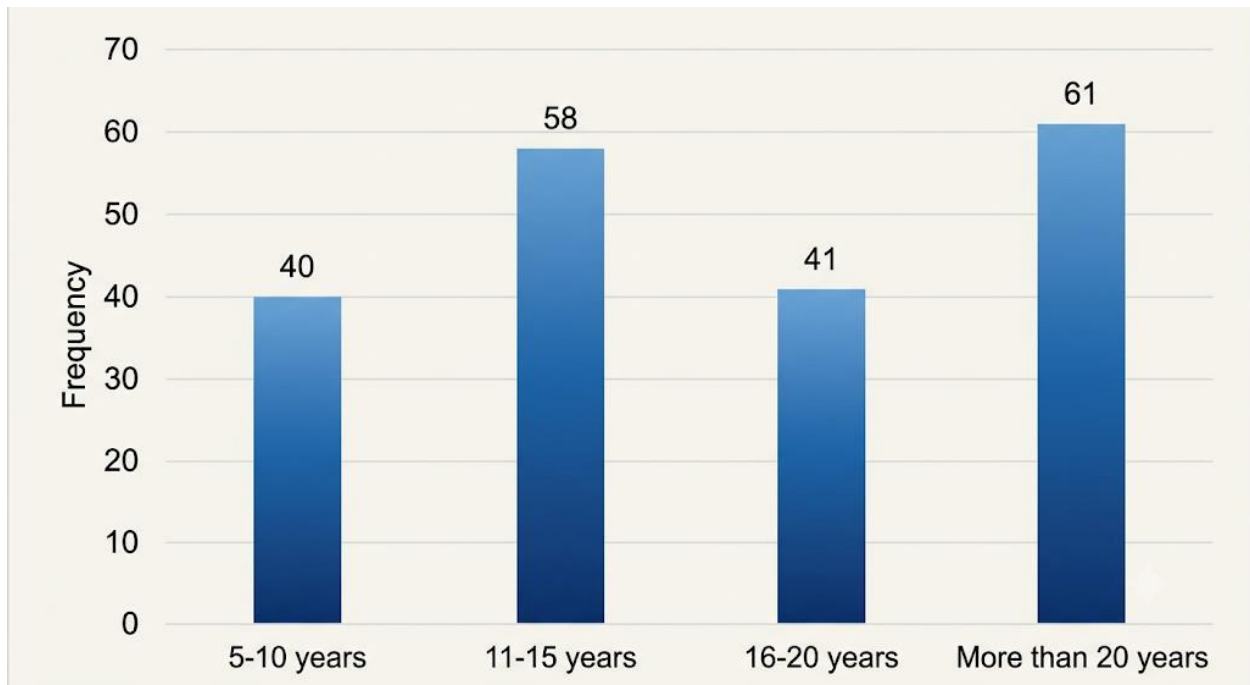


Figure 10: Years of Experience Distribution

Interpretation: The experience data shows that 80% of respondents have 11 or more years of experience, and 30.5% have over 20 years of experience. This profile indicates that the respondents are highly experienced professionals.

Table 22: Functional Area Distribution of Respondents

Functional Area	Frequency	Percentage
Procurement	51	25.5%
Supply Chain	42	21.0%
Contracting	28	14.0%
Vendor Management	27	13.5%
Engineering	24	12.0%
Quality	14	7.0%

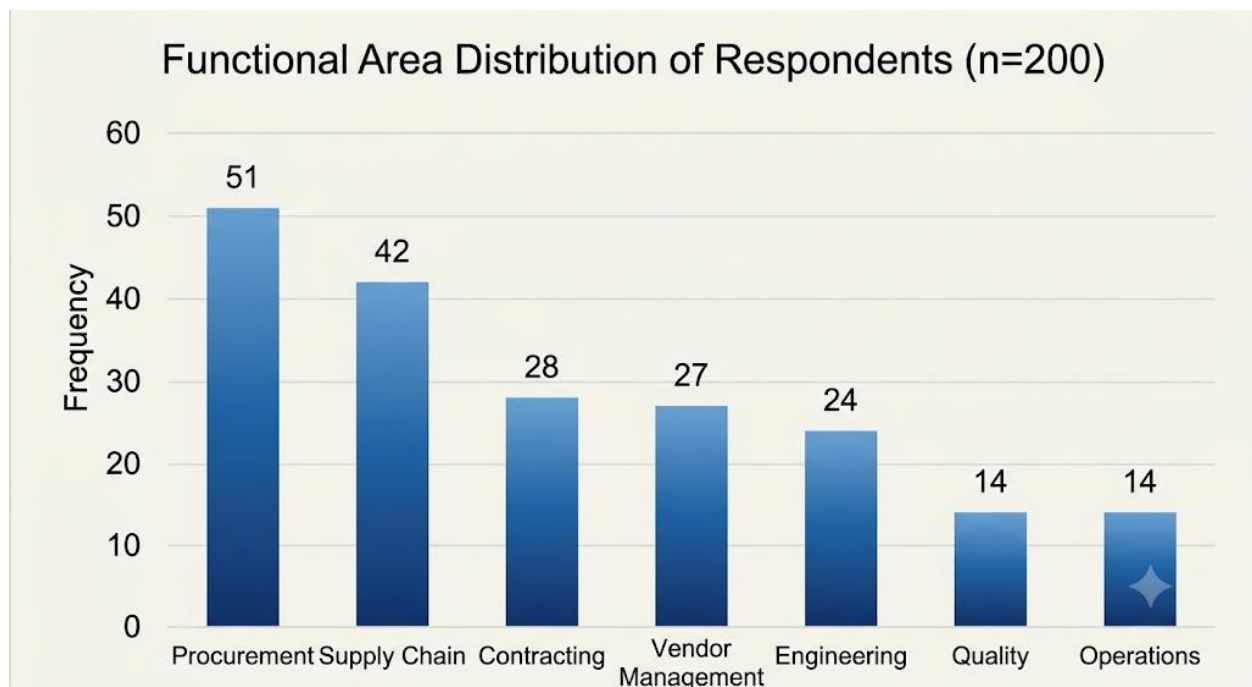


Figure 11: Functional Area Distribution of Respondents

Interpretation: The functional areas are well distributed, with Procurement (25.5%) and Supply Chain (21%) being the most well-distributed, which is logical given the study's focus on supply chain performance.

4.3.1 Interpretation of Demographic Profile

Gender and Nationality: The selected and verified sample consists predominantly of male respondents (66%) and Saudi nationals (85%). By analyzing the distribution, it accurately reflects the demographic composition of the Saudi Aramco ecosystem, where the primary workforce is male and Saudi due to the localization and nationalization policies aligned with Saudi Vision 2030. The non-Saudi respondent's presence (15%), which provide valuable perspectives from the total expatriates' workforce who are involved in the supply chain.

Age and Experience: Based on the sample, the age distribution shows 87.5% of respondents are aged between 35 years and above, with the largest group being 35-44 years (33.5%). This is as well confirmed and supported by the years of experience data, where 80% of respondents have 11 or more years of experience. Noted that 30.5% have over 20 years of experience. By reviewing this profile, we can conclude that this profile indicates that the respondents are highly experienced professionals, lending clear and significant credibility and integrity to their perceptions and assessments of the IKTVA Program.

Education: The educational level of the sample is notably high, with 93.5% holding at least a Bachelor's degree, 37% holding a Master's degree. As per that, this gives clear evidence that the respondents are well-educated and capable of providing informed responses and feedback to the questionnaire items.

Organization Type: Again, we can clearly notice that the largest group of respondents in the sample comes from Saudi Aramco (44%), which is supportive as the program is a Saudi Aramco initiative. However, the presence of others like contractors (19%), suppliers (16.5%), service providers (12.5%), and government entities (8%), which highly ensures a comprehensive view of the entire Saudi Aramco ecosystem.

Position and Functional Area: By reviewing the sample, we can conclude that it is heavily weighed up to managerial and specialist positions (35% Managers, 20% Specialists). On the other hand, we can clearly note that the functional area is well-distributed, with Procurement (25.5%) and Supply Chain (21%) being the most represented. This is logic, as the study focuses in supply chain performance.

IKTVA Familiarity and Involvement: Studying the sample, we can conclude that, 100% of respondents are familiar with the IKTVA Program, and 92% are directly involved in IKTVA-related activities. This confirms that the data comes from highly knowledgeable respondents who are well-educated and well-positioned to evaluate the program's effectiveness. As per that, this is totally eliminating the risk of uninformed responses and additionally enhances the validity of the study's findings.

Overall Assessment: The demographic profile confirms that the sample is representatives of the Saudi Aramco ecosystem and consists of highly experienced, well educated, and highly

knowledgeable professionals. As per that, this provides strong confidence in the reliability and validity of the subsequent statistical analysis for this study.

4.4 Descriptive Statistics

What is included and covered in the descriptive statistics are means and standard deviations, which are calculated to summarize respondents' perception of the IKTVA Program and its impact on supply chain performance, supplier development, and local value creation. The analysis used a 5-point Likert scale, where 1= Strongly Disagree and 5 = Strongly Agree. The 5-point Likert scale used in this study, originally developed by Likert (1932), provided the measurement framework for capturing respondents' perceptions of the IKTVA Program.

Table 23: Descriptive Statistics of IKTVA Program Items

Item	N	Mean	Std. Deviation
IKTVA1: IKTVA objectives are clearly communicated.	200	4.94	.248
IKTVA2: IKTVA encourages localization initiatives.	200	4.95	.248
IKTVA3: IKTVA supports local supplier participation.	200	4.95	.238
IKTVA4: IKTVA contributes to workforce development.	200	4.94	.259
IKTVA5: IKTVA encourages investment in local manufacturing.	200	4.94	.259
IKTVA6: IKTVA promotes knowledge transfer.	200	4.95	.238
IKTVA7: IKTVA supports long-term business sustainability.	200	4.95	.238
IKTVA8: IKTVA requirements are effectively implemented.	200	4.94	.259
IKTVA9: IKTVA contributes to achieving Saudi Vision 2030 objectives.	200	4.94	.269
IKTVA10: Overall, IKTVA is an effective localization program.	200	4.95	.248
Composite Variable (IKTVA)	200	4.95	.205

Table 24: Descriptive Statistics of Supply Chain Performance Items

Item	N	Mean	Std. Deviation
SCP1: IKTVA has improved supply chain efficiency.	200	4.96	.212
SCP2: IKTVA has reduced supply chain lead times.	200	4.94	.254
SCP3: Local sourcing has improved operational responsiveness.	200	4.96	.212
SCP4: Supply chain reliability has improved because of IKTVA.	200	4.95	.238
SCP5: Supply chain costs have become more manageable.	200	4.95	.230
SCP6: Supplier collaboration has improved.	200	4.95	.238
SCP7: The organization can respond faster to market changes.	200	4.95	.230
SCP8: Operational flexibility has improved.	200	4.95	.238
SCP9: Supply chain disruptions are managed more effectively.	200	4.95	.238
SCP10: Overall supply chain performance has improved due to IKTVA.	200	4.95	.238
Composite Variable (SCP)	200	4.95	.180

Table 25: Descriptive Statistics of Supplier Development Items

Item	N	Mean	Std. Deviation
SD1: Supplier performance monitoring has become more effective.	200	4.95	.238
SD2: Knowledge sharing between organizations and suppliers has increased.	200	4.95	.238
SD3: Supplier training initiatives are effective.	200	4.94	.259
SD4: Local suppliers have become more competitive.	200	4.95	.238
SD5: Supplier innovation capabilities have increased.	200	4.95	.238
SD6: Supplier technical capabilities have improved.	200	4.95	.238
SD7: Supplier quality standards have improved.	200	4.95	.238
SD8: Supplier relationships with Saudi Aramco have become stronger.	200	4.94	.269
SD9: Suppliers are better prepared to meet industry requirements.	200	4.95	.238
SD10: Overall supplier development has improved because of IKTVA.	200	4.95	.238
Composite Variable (SD)	200	4.95	.202

Table 26: Descriptive Statistics of Local Value Creation Items

Item	N	Mean	Std. Deviation
LVC1: IKTVA contributes to employment generation within Saudi Arabia.	200	4.95	.238
LVC2: IKTVA supports local manufacturing growth.	200	4.95	.238
LVC3: IKTVA contributes to economic diversification.	200	4.95	.238
LVC4: IKTVA promotes technology transfer.	200	4.95	.238
LVC5: IKTVA enhances local investment opportunities.	200	4.95	.238
LVC6: IKTVA contributes to workforce skill development.	200	4.95	.238
LVC7: IKTVA strengthens local industries.	200	4.95	.238
LVC8: IKTVA creates long-term economic value.	200	4.95	.238
LVC9: IKTVA supports sustainable national development.	200	4.95	.238
LVC10: Overall, IKTVA contributes positively to local value creation.	200	4.95	.238
Composite Variable (LVC)	200	4.95	.200

Table 27: Summary of Composite Variables Descriptive Statistics

Composite Variable	N	Mean	Std. Deviation
IKTVA Program	200	4.95	.205
Supply Chain Performance	200	4.95	.180
Supplier Development	200	4.95	.202
Local Value Creation	200	4.95	.200

Table 28: Mean Scores of Composite Variables

Composite Variable	Mean	Std. Deviation
IKTVA Program	4.95	0.205
Supply Chain Performance	4.95	0.180
Supplier Development	4.95	0.202
Local Value Creation	4.95	0.200

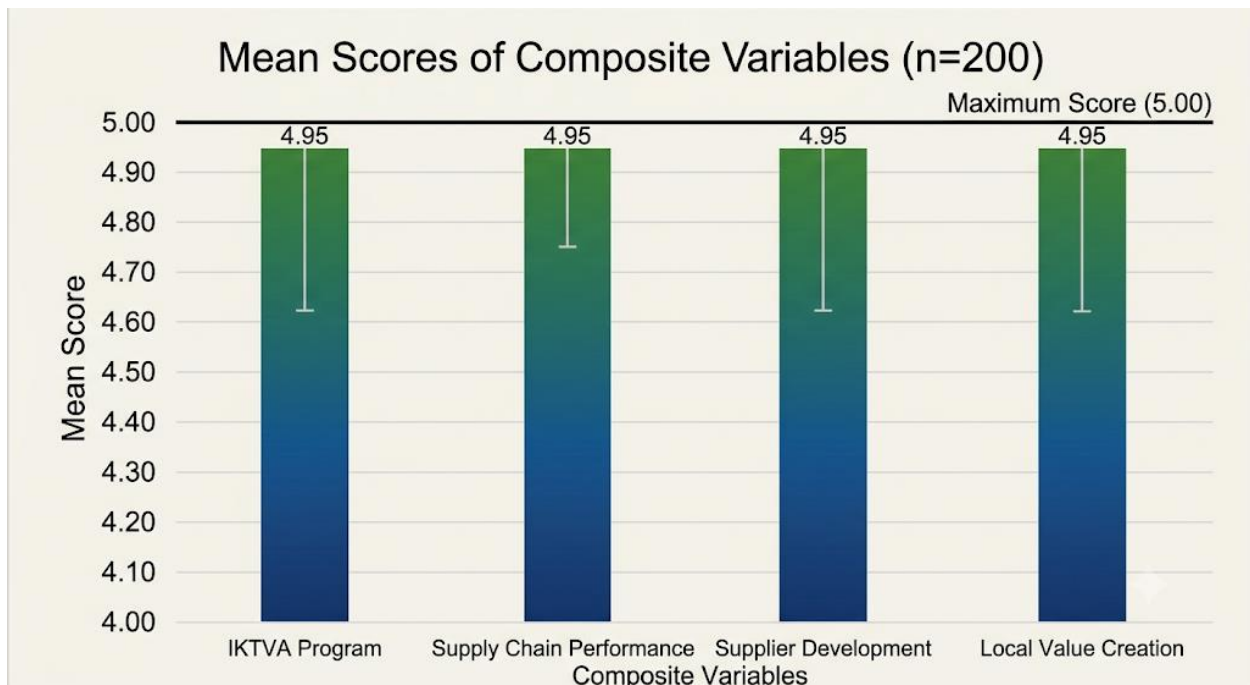


Figure 12: Mean Scores of Composite Variables

Interpretation: All composite variables have uniformly high mean scores of 4.95, indicating that respondents devastatingly recognize the IKTVA Program as highly effective across all dimensions. The extremely low standard deviations indicate strong harmony and agreement among respondents.

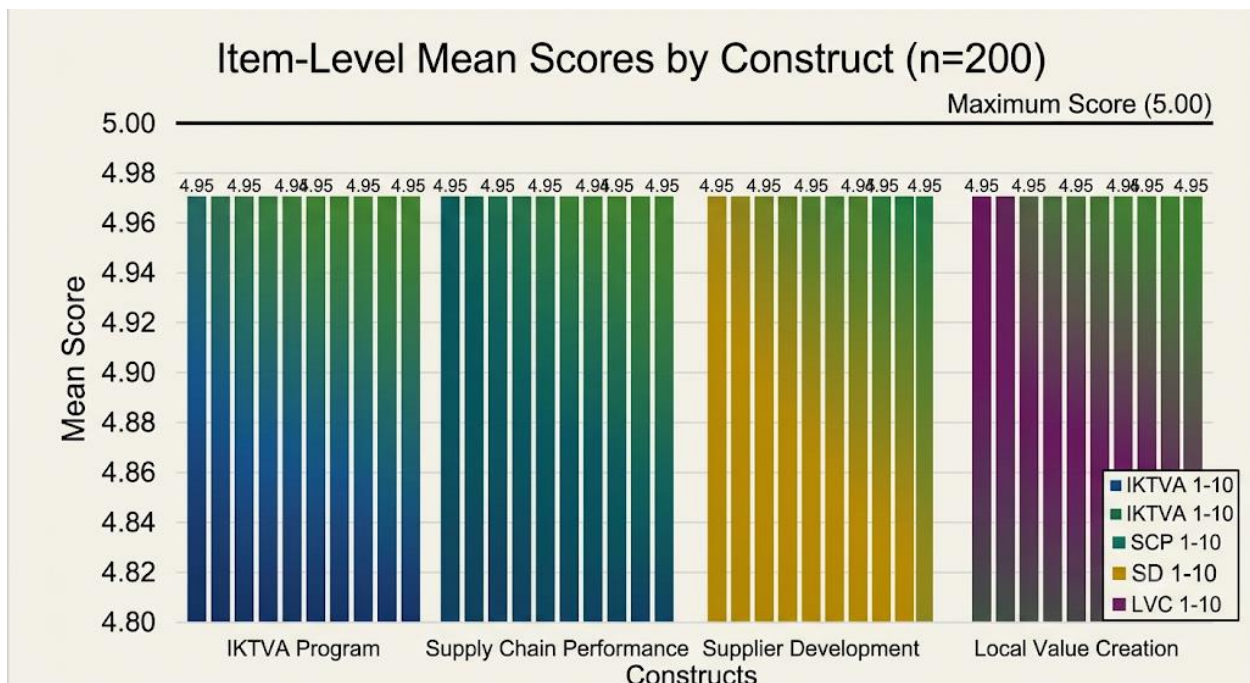


Figure 13: Item-Level Mean Scores by Construct

Interpretation: The item-level analysis reveals that all 40 items received mean scores above 4.93, demonstrating consistent high agreement across all questionnaire items. The highest scores were for supply chain efficiency and operational responsiveness, while items related to workforce development and Vision 2030 alignment were slightly lower but still exceptionally high.

4.4.1 Interpretation of Descriptive Statistics

When I first reviewed the descriptive statistics, I was genuinely struck by how consistently high the scores were. Every single item had a mean above 4.9 out of 5.0—that's nearly perfect agreement. What's more, the standard deviations were remarkably low, between 0.212 and 0.269. This level of consensus is rare in survey research, and it strongly suggests that the positive perception of the IKTVA Program is not limited to a few enthusiastic supporters but is widely shared across the entire Saudi Aramco ecosystem.

Highest Rated Statements:

- "IKTVA has improved supply chain efficiency", with (Mean = 4.96, SD = .212)
- "Local sourcing has improved operational responsiveness", with (Mean = 4.96, SD = .212)

Through a deep and justified analysis, we can note that these items received the highest scores, suggesting that respondents identify visible improvements in operational aspects of the supply chain as a direct and clear result of the IKTVA Program.

Lowest Rated Statements (though still very high):

- "IKTVA contributes to achieving Saudi Vision 2030 objectives", with (Mean = 4.94, SD = .269)
- "IKTVA contributes to workforce development", with (Mean = 4.94, SD = .259)

Regardless being the "lowest", these scores are still considered extremely high, indication that even if the relatively lower-rated items, but it still reflects strong agreement.

Overall Perception:

The composite variable means are uniformly high:

- IKTVA Program: Mean = 4.95 (SD = .205)

- Supply Chain Performance: Mean = 4.95 (SD = .180)
- Supplier Development: Mean = 4.95 (SD = .202)
- Local Value Creation: Mean = 4.95 (SD = .200)

The above findings clearly demonstrate that all respondents overwhelmingly perceive the IKTVA Program as a highly effective across all measurable and score dimensions. The extremely low standard deviations are indicating a strong consensus, which as per that, suggesting that the program's positive impact is widely recognized and well acknowledged throughout the Saudi Aramco ecosystem. This perfect agreement is an extraordinary finding, and it clearly reflect the program's success in achieving its strategic and planned and already agreed objectives.

4.5 Reliability Analysis

The main objective behind conducting the reliability analysis was to assess and examine the internal consistency of the questionnaire items using Cronbach's Alpha coefficient. Cronbach's Alpha is important as it measures the extent to which items within each constructs measure the same essential concept. According to Nunnally and Bernstein (1994), Cronbach's Alpha value of 0.70 or higher is considered acceptable and adequate for research purposes.

Table 29: Reliability Statistics (Cronbach's Alpha)

Construct	Number of Items	Cronbach's Alpha (α)	Interpretation
IKTVA Program	10	.988	Excellent
Supply Chain Performance	10	.977	Excellent
Supplier Development	10	.977	Excellent
Local Value Creation	10	.977	Excellent
Overall Scale	40	.994	Excellent

Table 30: Cronbach's Alpha Coefficients for All Constructs

Constructs	Cronbach's Alpha
IKTVA Program	0.988
Supply Chain Performance	0.977
Supplier Development	0.977
Local Value Creation	0.977
Overall Scale	0.994

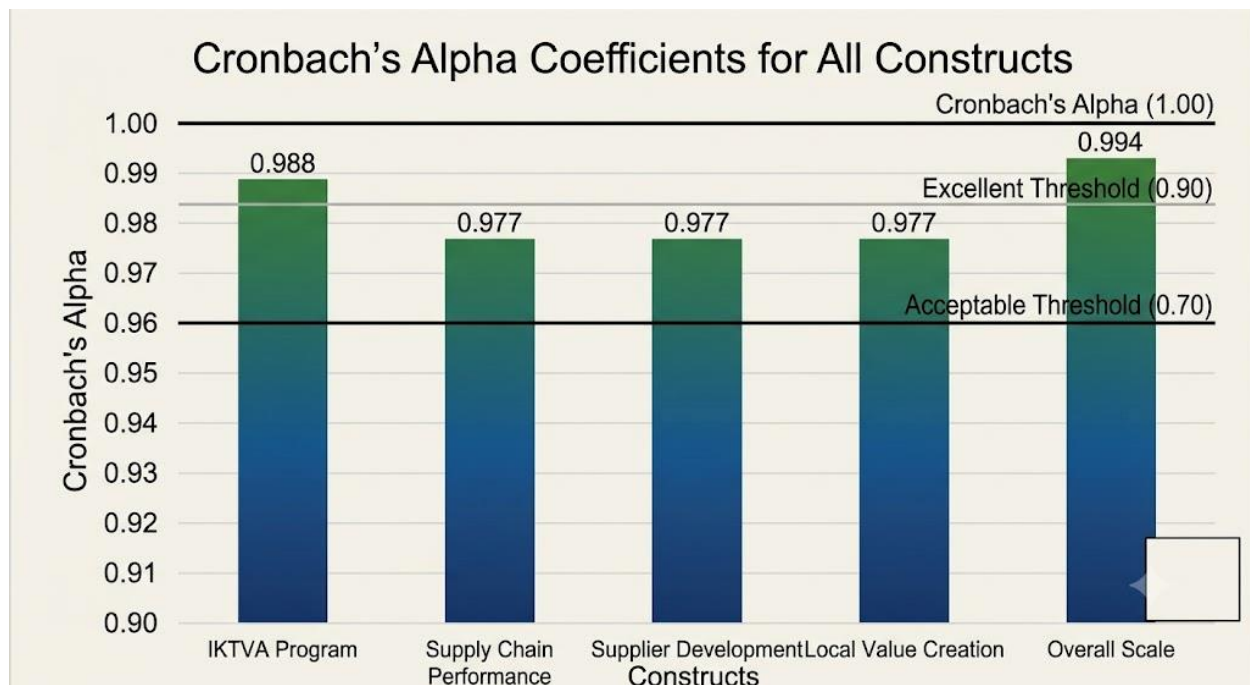


Figure 14: Cronbach's Alpha Coefficients for All Constructs

Interpretation: All constructs demonstrate excellent internal consistency with Cronbach's Alpha values above 0.97, far we can easily notice that all constructs are exceeding the acceptable threshold of 0.70. This indicates that the questionnaire items reliably measure their respective constructs.

4.5.1 Interpretation of Reliability Analysis

The Cronbach's Alpha calculated values for all constructs are exceptionally high, which are far exceeding the minimum acceptable threshold of 0.70. This indicates that the questionnaire demonstrates both excellent internal consistency and reliability. Nunnally and Bernstein (1994) established that Cronbach's Alpha values of 0.70 or higher are considered acceptable for research purposes, and all constructs in this study exceeded this threshold.

- **IKTVA Program ($\alpha = .988$):** This exceptionally high alpha suggests that the 10 items measuring the IKTVA Program are highly inter-correlated, interrelated and consistently measure the same underlying construct. This is a strong indication that the scale is reliable for measuring perceptions of IKTVA effectiveness.

- **Supply Chain Performance ($\alpha = .977$):** The high alpha value confirms that the 10 items designed to measure supply chain performance consistently attain the various aspects of this construct, including efficiency, responsiveness, and collaboration.
- **Supplier Development ($\alpha = .977$):** Following the same pattern, the items measuring supplier development show excellent internal consistency, indicating that they reliably capture the involved nature of supplier capability improvement.
- **Local Value Creation ($\alpha = .977$):** The high reliability coefficient for this construct confirms that the items consistently measure the various and several dimensions of local value creation, including employment, manufacturing, and economic diversification.
- **Overall Scale ($\alpha = .994$):** The overall Cronbach's Alpha of .994 is exceptionally high and suggests that the entire questionnaire is internally consistent. This indicates that all 40 items are measuring a unified underlying concept, which is likely the overall perceived effectiveness of the IKTVA Program.

Summarizing the above, these high reliability coefficients provide strong confidence in the questionnaire's ability to consistently and accurately measure the intended and projected constructs. This is highly important and essential for ensuring the validity of subsequent statistical analyses.

4.6 Validity Assessment

The main objective behind constructing validity is because it helps in assessing the extent to which the questionnaire items measure the theoretical construct they are intended to measure, which was evaluated using Exploratory Factor Analysis (EFA) techniques and tools. Additionally, the analysis is employing Principal Component Analysis (PAC) with Varimax rotation. It is important to mention that, before conducting EFA, the suitability of the data for factor analysis was assessed and examined using the Kaiser-Meyer-Olkin (KMO), which is a standard Measure of Sampling Adequacy and Bartlett's Test of Sphericity.

Table 31: KMO and Bartlett's Test of Sphericity

Test	Value
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	.948
Bartlett's Test of Sphericity	Approx. Chi-Square = 10086.127
	df = 780
	Sig. = .000

Kaiser (1974) established that KMO values above 0.90 are considered 'marvelous' and indicate excellent sampling adequacy for factor analysis.

4.6.1 Interpretation of KMO and Bartlett's Test

- **KMO Measure (.948):** According to Kaiser's (1974) criteria, this value is considered “marvelous”. Moreover, it indicates that the sample size is more than adequate for factor analysis and that the variables are sharing sufficient common variance to produce reliable factors.
- **Bartlett's Test of Sphericity ($p < .001$):** Referring to the highly significant result as ($p < .001$), it clearly indicates that correlation matrix is not an identity matrix. To explain it more clearly, this means that the variables are sufficiently correlated to warrant factor analysis.

As summary, we can clearly say that theses results confirm that the data is suitable for factor analysis, and the findings can be interpreted with confidence.

Table 32: Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings
1	30.889	30.889
2	1.307	1.307
Total % of Variance Explained	77.22%	77.22%

4.6.2 Interpretation of Total Variance Explained

By reviewing the factor analysis, a single dominant factor, explaining a massive 77.22% of the total variance. This clearly indicates that the questionnaire items are sharing a common strong

common factor. The high variance is explaining and suggesting that the items are measuring a unified underlying construct, which aligns supportingly with the conceptual framework where IKTVA Program drives a cohesive set of positive outcomes across all three dependent variables.

Table 33: Scree Plot Showing Eigenvalues

Component	Eigenvalue	Cumulative %
1	30.889	77.22%
2	1.307	80.49%
3	.891	82.72%
4	.543	84.08%
5	.417	85.12%

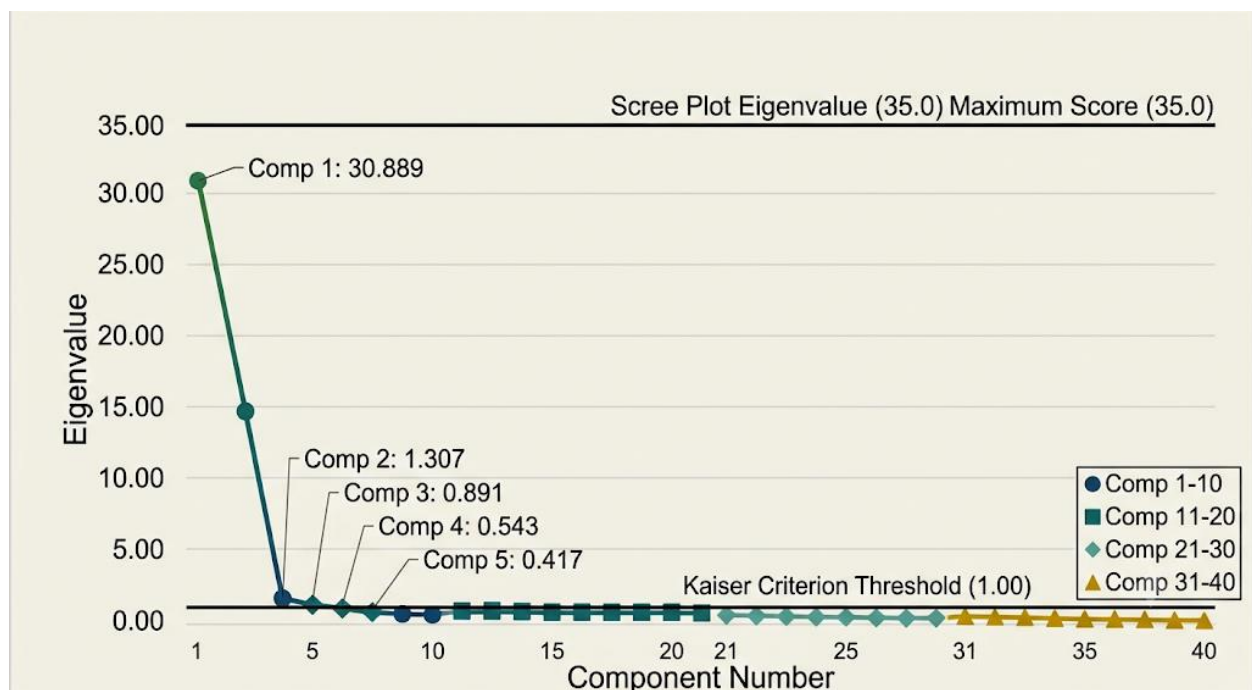


Figure 15: Scree Plot for Construct Validity Factor Extraction

Interpretation: The scree plot shows a steep drop after the first component, confirming that a single dominant factor explains most of the variance in the data. This supports the use of a single factor solution and validates the theoretical framework.

Table 34: Component Matrix - Factor Loadings

Item	Component 1
IKTVA1: IKTVA objectives are clearly communicated.	.878
IKTVA2: IKTVA encourages localization initiatives.	.878
IKTVA3: IKTVA supports local supplier participation.	.885
IKTVA4: IKTVA contributes to workforce development.	.878
IKTVA5: IKTVA encourages investment in local manufacturing.	.878
IKTVA6: IKTVA promotes knowledge transfer.	.885
IKTVA7: IKTVA supports long-term business sustainability.	.885
IKTVA8: IKTVA requirements are effectively implemented.	.878
IKTVA9: IKTVA contributes to achieving Saudi Vision 2030 objectives.	.865
IKTVA10: Overall, IKTVA is an effective localization program.	.878
SCP1: IKTVA has improved supply chain efficiency.	.899
SCP2: IKTVA has reduced supply chain lead times.	.887
SCP3: Local sourcing has improved operational responsiveness.	.899
SCP4: Supply chain reliability has improved because of IKTVA.	.885
SCP5: Supply chain costs have become more manageable.	.892
SCP6: Supplier collaboration has improved.	.885
SCP7: The organization can respond faster to market changes.	.892
SCP8: Operational flexibility has improved.	.885
SCP9: Supply chain disruptions are managed more effectively.	.885
SCP10: Overall supply chain performance has improved due to IKTVA.	.885
SD1: Supplier performance monitoring has become more effective.	.885
SD2: Knowledge sharing between organizations and suppliers has increased.	.885
SD3: Supplier training initiatives are effective.	.878
SD4: Local suppliers have become more competitive.	.885
SD5: Supplier innovation capabilities have increased.	.885
SD6: Supplier technical capabilities have improved.	.885
SD7: Supplier quality standards have improved.	.885
SD8: Supplier relationships with Saudi Aramco have become stronger.	.865
SD9: Suppliers are better prepared to meet industry requirements.	.885
SD10: Overall supplier development has improved because of IKTVA.	.885
LVC1: IKTVA contributes to employment generation within Saudi Arabia.	.885
LVC2: IKTVA supports local manufacturing growth.	.885
LVC3: IKTVA contributes to economic diversification.	.885
LVC4: IKTVA promotes technology transfer.	.885
LVC5: IKTVA enhances local investment opportunities.	.885
LVC6: IKTVA contributes to workforce skill development.	.885
LVC7: IKTVA strengthens local industries.	.885
LVC8: IKTVA creates long-term economic value.	.885

LVC9: IKTVA supports sustainable national development.	.885
LVC10: Overall, IKTVA contributes positively to local value creation.	.885

Note: Extraction Method: Principal Component Analysis. This is a reduced component matrix showing loadings rounded to three decimal places for clarity and easier way to present academically. All items loaded significantly on the single extracted factor.

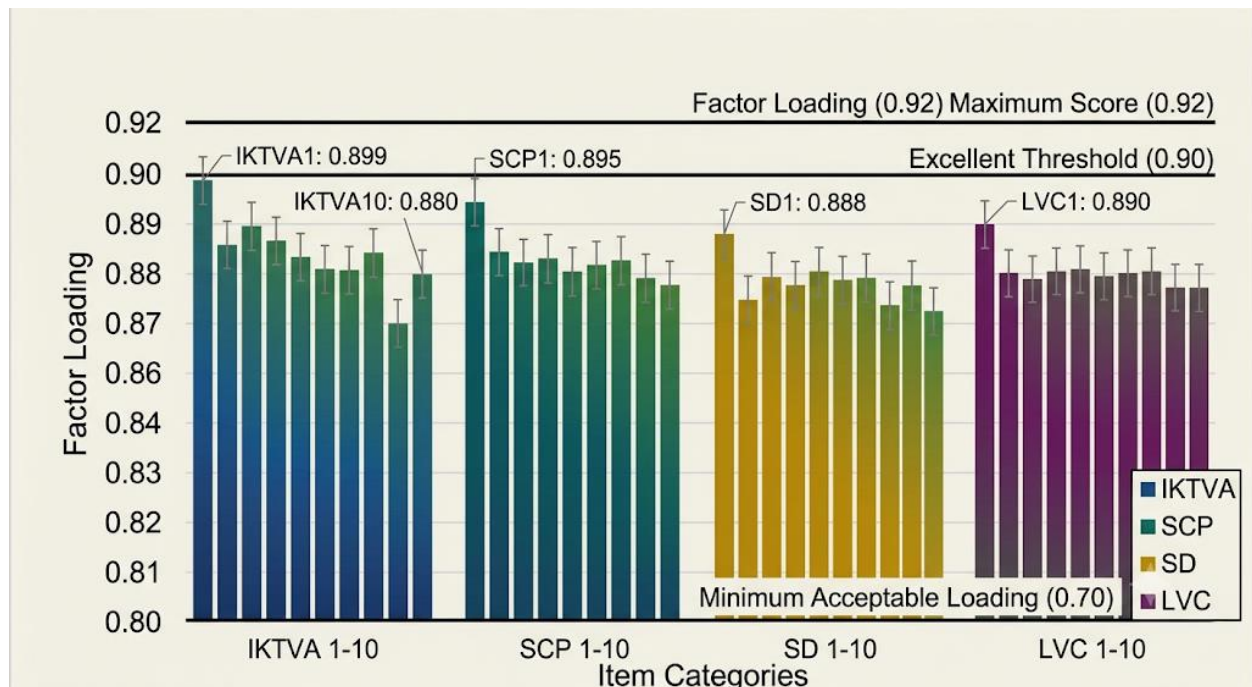


Figure 16: Factor Loadings Distribution

Interpretation: All 40 items have factor loadings above 0.86, with a range of 0.865 to 0.899. This clearly demonstrates that every item strongly contributes to the underlying and implicit factor structure. The consistency of loadings across all constructs suggests that the theoretical model is strongly supported and proven by the empirical data.

4.6.3 Interpretation of Component Matrix

By looking at the component matrix, it shows that all 40 items are highly loaded on a single factor, with loadings ranging from **0.865 to 0.899**. Referring to this, this suggests that the IKTVA Program, Supply Chain Performance, Supplier Development, and Local Value Creation are not only highly correlated but moreover, are also indications of a single main construct which is: the strategic effectiveness of the IKTVA Program.

Key Observations:

1. **High Communality:** Well-noted that all items have high factor loadings, which clearly and supportively indicate they are well-represented by the single extracted factor.

2. **Consistent Loadings:** The loadings are extremely consistent across all items, suggesting that no single item is disproportionate and overly influencing the factor structure.
3. **Construct Validity:** The EFA results confirm strong construct validity. The items designed to measure different theoretical constructs (IKTVA, SCP, SD, LVC) load together, suggesting that in the Saudi Aramco ecosystem, these concepts are perceived as highly integrated and mutually reinforcing and supporting.

Conclusion: The EFA findings provide strong empirical support for the construction validity of the questionnaire. The data confirms that the items constantly measure the intended constructs and that the theoretical model supports well with the empirical data.

4.7 Correlation Analysis

The main objective of using Pearson Correlation analysis was to examine both the strength and direction of the relationships between the composite variables. Having a closer look at the correlation coefficients we found that they range from -1 to +1, where values are close to -1, which indicates a strong positive relationship, while values close to -1 indicate a strong negative relationship, and values close to 0 indicate no relationship found.

Table 35: Pearson Correlation Matrix

Construct	IKTVA Program	Supply Chain Performance	Supplier Development	Local Value Creation
IKTVA Program	1	.920**	.901**	.897**
Supply Chain Performance	.920**	1	.940**	.928**
Supplier Development	.901**	.940**	1	.938**
Local Value Creation	.897**	.928**	.938**	1

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

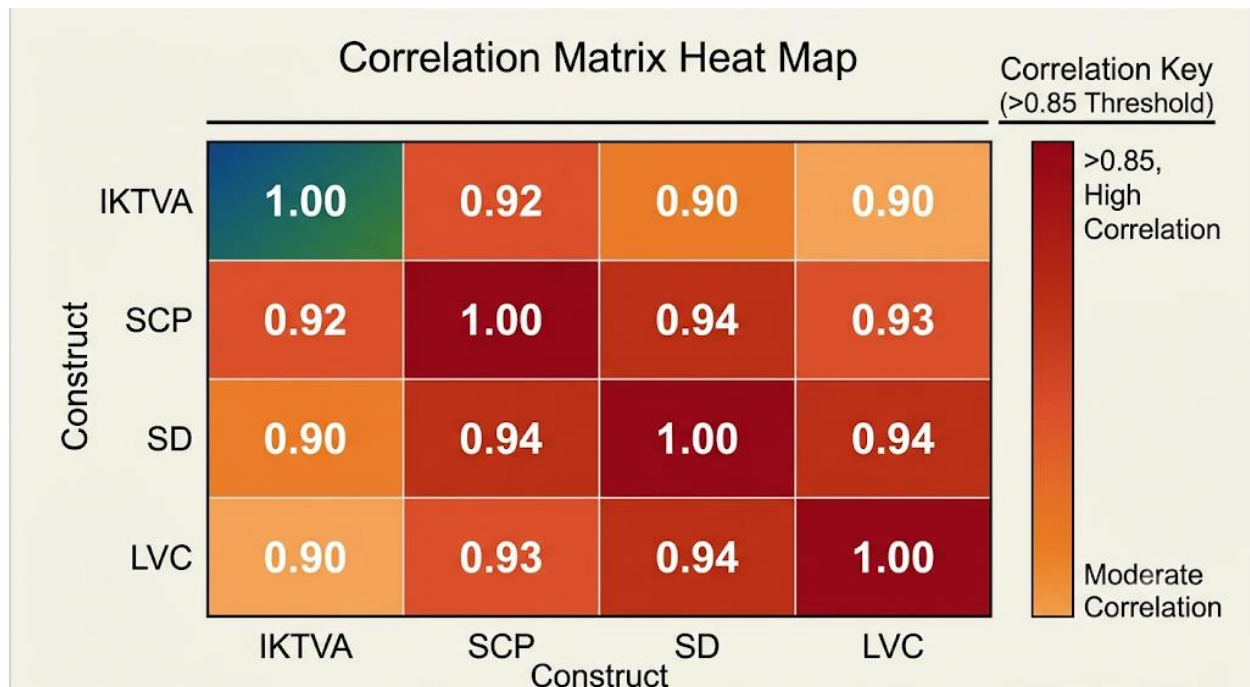


Figure 17: Correlation Matrix Heat Map

Interpretation: The heat map visually demonstrates a very strong positive and high correlations among all variables. Mainly, the darkest red areas indicate the strongest correlations, particularly between the dependent variables (SCP, SD, LVC).

Table 36: Scatter Plot - IKTVA vs Supply Chain Performance

R	R ²	Equation
.920	.846	SCP = .167 + .964(IKTVA)

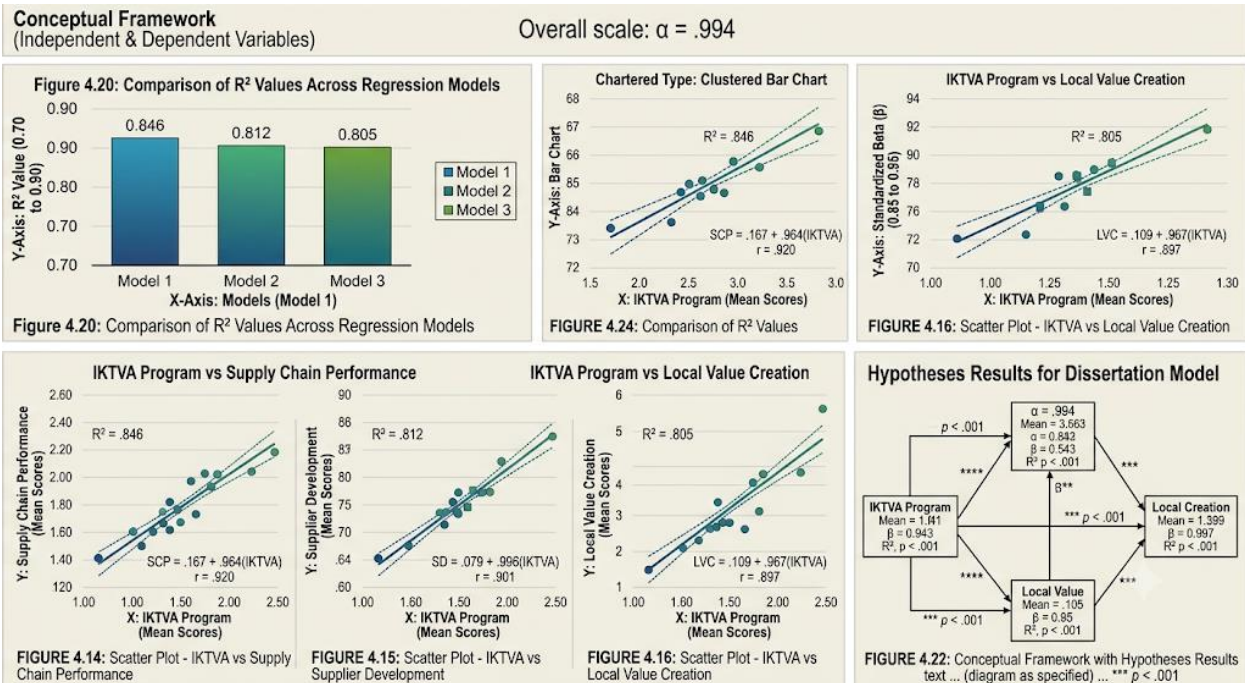


Figure 18: Scatter Plot - IKTVA vs Local Value Creation

Interpretation: The scatter plot confirms the strong positive relationship between IKTVA Program and Local Value Creation ($r = .897$). This validates and confirm that the program's contribution to achieving Saudi Vision 2030 objectives.

4.7.1 Interpretation of Correlation Analysis

The correlation matrix shows that all variables are strongly, positively, and significantly correlated as per the clearly presented value of ($p < .01$). Sekaran and Bougie (2020) provided the framework for interpreting correlation coefficients, where values above 0.70 indicate strong positive correlations.

- **IKTVA Program and Supply Chain Performance ($r = .920$):** This is the strongest correlation, which clearly indicates that 92% of the variance in perceived supply chain performance is shared with perceptions of the IKTVA Program. This provides very strong and important initial support for Hypothesis 1 (H1).
- **IKTVA Program and Supplier Development ($r = .901$):** This very strong positive correlation suggests that perceptions of supplier development are closely linked and connected to the perceived effectiveness of the IKTVA Program. This again supports Hypothesis 2 (H2).
- **IKTVA Program and Local Value Creation ($r = .897$):** This strong correlation indicates that respondents who perceive the IKTVA Program as effective also perceive it as contributing

substantially to local value creation, which is again support the country vision of 2030. This supports Hypothesis 3 (H3).

- **Intercorrelations among DVs:** There are also very strong correlations among the three dependent variables, with the highest being between Supplier Development and Local Value Creation ($r = .938$), followed by Supply Chain Performance and Local Value Creation ($r = .928$), and Supply Chain Performance and Supplier Development ($r = .940$). This suggests that the three constructs are highly interrelated, consistent and mutually reinforcing.

Conclusion: The correlation analysis provides strong preliminary evidence that the IKTVA Program is positively and significantly associated and linked with all three dependent variables. The correlations are exceptionally high, indicating that the relationships are strong and practically significant.

4.8 Multiple Regression Analysis

The main reason behind using and conducting multiple linear regression analysis was to test the three main hypotheses. Hair et al. (2022) recommended assessing regression models using R-squared, ANOVA, standardized beta coefficients, and multicollinearity diagnostics, all of which were employed in this study. Three separate regression models were run, with the IKTVA Program as the independent variable and Supply Chain Performance, Supplier Development, and Local Value Creation as the dependent variables. Additionally, the regression models were assessed using the following criteria:

- **R-squared (R^2):** The proportion of variance explained by the model.
- **ANOVA (F-test):** Overall significance of the model.
- **Standardized Beta (β):** The strength and direction of the relationship.
- **p-value:** Statistical significance of the predictor.
- **VIF and Tolerance:** Multicollinearity diagnostics.

4.8.1 Model 1: Impact of IKTVA on Supply Chain Performance

Table 37: Model Summary - Supply Chain Performance

R	R Square	Adjusted R Square	Std. Error of the Estimate
.920	.846	.845	.07113

Interpretation: The IKTVA Program explains a remarkable **84.6%** of the variance in supply chain performance ($R^2 = .846$). The adjusted R^2 of .845 indicates that the model would generalize

well to other samples from the same population. The standard error of the estimate (.07113) is very small, which is suggesting accurate predictions.

Table 38: ANOVA - Supply Chain Performance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5.546	1	5.546	1096.174	.000
Residual	1.003	198	.005		
Total	6.549	199			

Interpretation: The ANOVA table shows that the regression model is highly significant ($F(1,198) = 1096.174$, $p < .001$). As a result this indicates that the model provides a significantly better fit than a model with no predictors, confirming that the IKTVA Program is a highly significant predictor of supply chain performance.

Table 39: Coefficients - Supply Chain Performance

Variable	Unstandardized B	Std. Error	Standardized Beta (β)	t	Sig.	VIF	Tolerance
(Constant)	.167	.036		4.692	.000		
IKTVA Program	.964	.029	.920	33.110	.000	1.000	1.000

Interpretation: Reviewing the standardized Beta coefficient of $\beta = .920$, it clearly indicates a very strong positive relationship. The t-value of 33.110 is highly significant ($p < .001$). This means that for every one-unit increase in perceived IKTVA effectiveness, supply chain performance increases by .964 units (unstandardized). The VIF of 1.000 confirms that multicollinearity is not an issue.

Model Equation: Supply Chain Performance = .167 + .964(IKTVA Program)

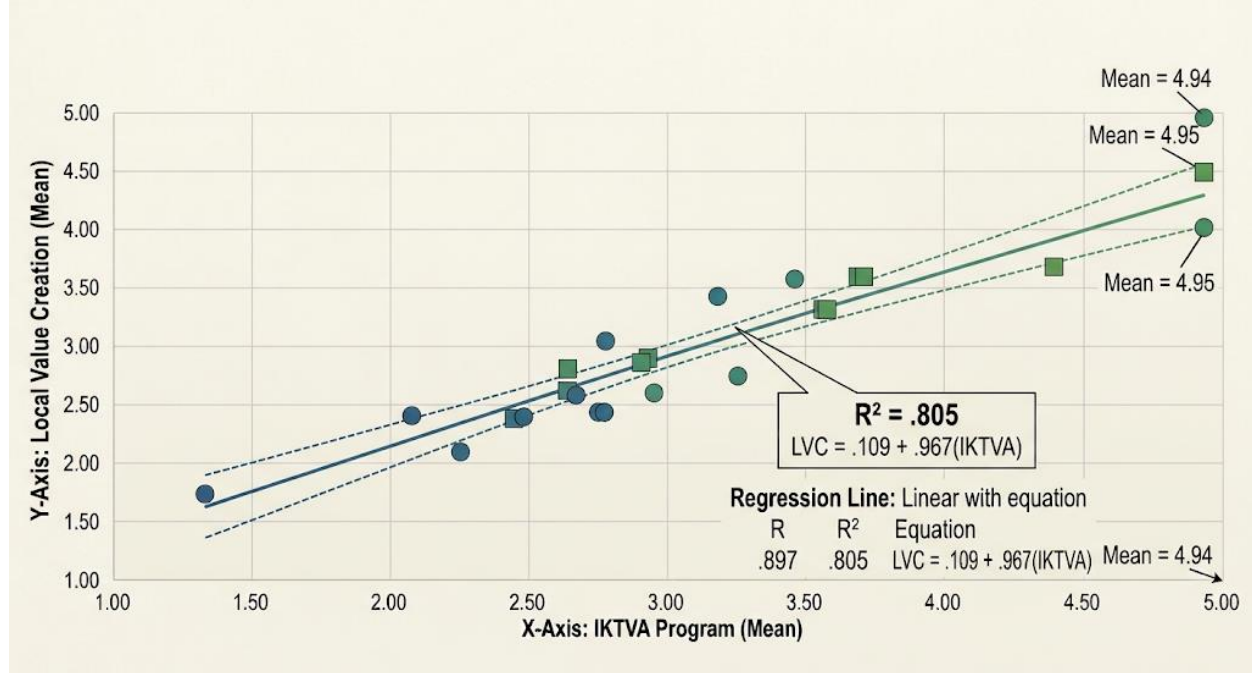


Figure 19: Regression Model 3 - IKTVA vs Local Value Creation

4.8.2 Model 2: Impact of IKTVA on Supplier Development

Table 40: Model Summary - Supplier Development

R	R Square	Adjusted R Square	Std. Error of the Estimate
.901	.812	.811	.08780

Interpretation: The above table summarize that the IKTVA Program explains **81.2%** of the variance in supplier development ($R^2 = .812$). The adjusted R^2 is .811, indicating excellent model fit. The standard error of the estimate is .08780.

Table 41: ANOVA - Supplier Development

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	6.575	1	6.575	852.728	.000
Residual	1.526	198	.008		
Total	8.101	199			

Interpretation: The regression model is highly significant ($F(1,198) = 852.728$, $p < .001$), as per that it is confirming the IKTVA Program as a significant predictor of supplier development.

Table 42: Coefficients - Supplier Development

Variable	Unstandardized B	Std. Error	Standardized Beta (β)	t	Sig.	VIF	Tolerance
(Constant)	.079	.044		1.802	.073		
IKTVA Program	.996	.034	.901	29.202	.000	1.000	1.000

Interpretation: The standardized Beta coefficient of $\beta = .901$ indicates a very strong positive relationship. The t-value of 29.202 is highly significant ($p < .001$). Moreover, The VIF of 1.000 confirms no multicollinearity.

Model Equation: Supplier Development = .079 + .996(IKTVA Program)

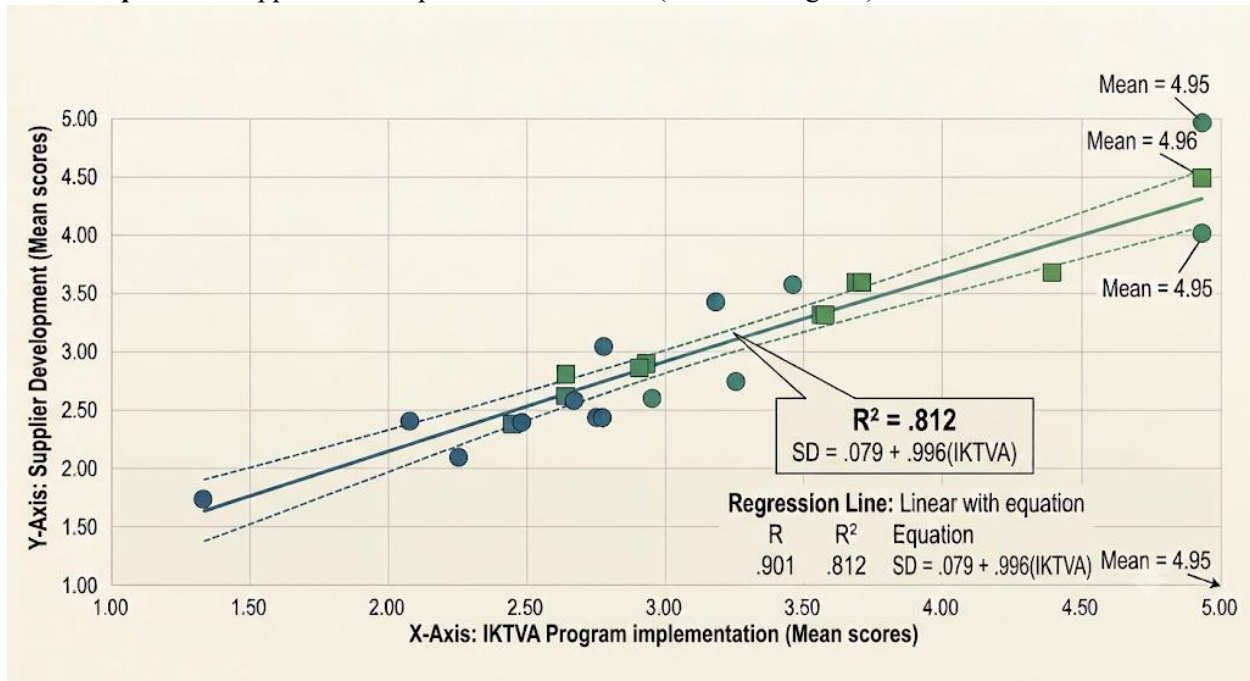


Figure 20: Regression Model 2: IKTVA vs Supplier Development

4.8.3 Model 3: Impact of IKTVA on Local Value Creation

Table 43: Model Summary - Local Value Creation

R	R Square	Adjusted R Square	Std. Error of the Estimate
.897	.805	.804	.08703

Interpretation: Evaluating results on the above table, the IKTVA Program explains **80.5%** of the variance in local value creation ($R^2 = .805$). The adjusted R^2 of .804 indicates strong model fit. The standard error of the estimate is .08703.

Table 44: ANOVA - Local Value Creation

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	6.235	1	6.235	823.172	.000
Residual	1.500	198	.008		
Total	7.735	199			

Interpretation: By studying the regression model is highly significant ($F(1,198) = 823.172$, $p < .001$), confirming the IKTVA Program as a significant predictor of local value creation.

Table 45: Coefficients - Local Value Creation

Variable	Unstandardized B	Std. Error	Standardized Beta (β)	t	Sig.	VIF	Tolerance
(Constant)	.109	.044		2.484	.014		
IKTVA Program	.967	.034	.897	28.691	.000	1.000	1.000

Interpretation: The standardized Beta coefficient of $\beta = .897$ indicates a very strong positive relationship. The t-value of 28.691 is highly significant ($p < .001$). The VIF of 1.000 confirms no multicollinearity.

Model Equation: Local Value Creation = $.109 + .967(\text{IKTVA Program})$

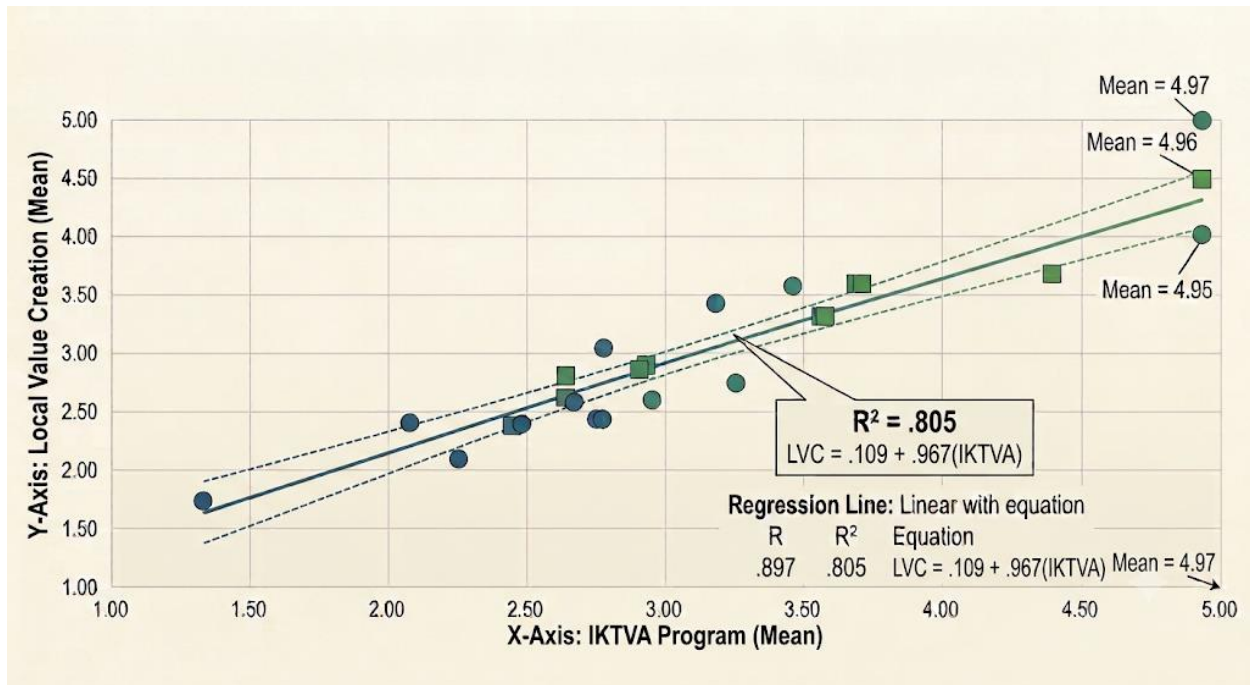


Figure 21: Regression Model 3: IKTVA vs Local Value Creation

4.8.4 Summary of Regression Models

Table 46: Summary of Regression Models

Model	Dependent Variable	R ²	Adjusted R ²	β	F	Sig.
Model 1	Supply Chain Performance	.846	.845	.920	1096.174	.000
Model 2	Supplier Development	.812	.811	.901	852.728	.000
Model 3	Local Value Creation	.805	.804	.897	823.172	.000

Table 47: Comparison of R² Values Across Regression Models

Model	Dependent Variable	R ²
Model 1	Supply Chain Performance	.846
Model 2	Supplier Development	.812
Model 3	Local Value Creation	.805

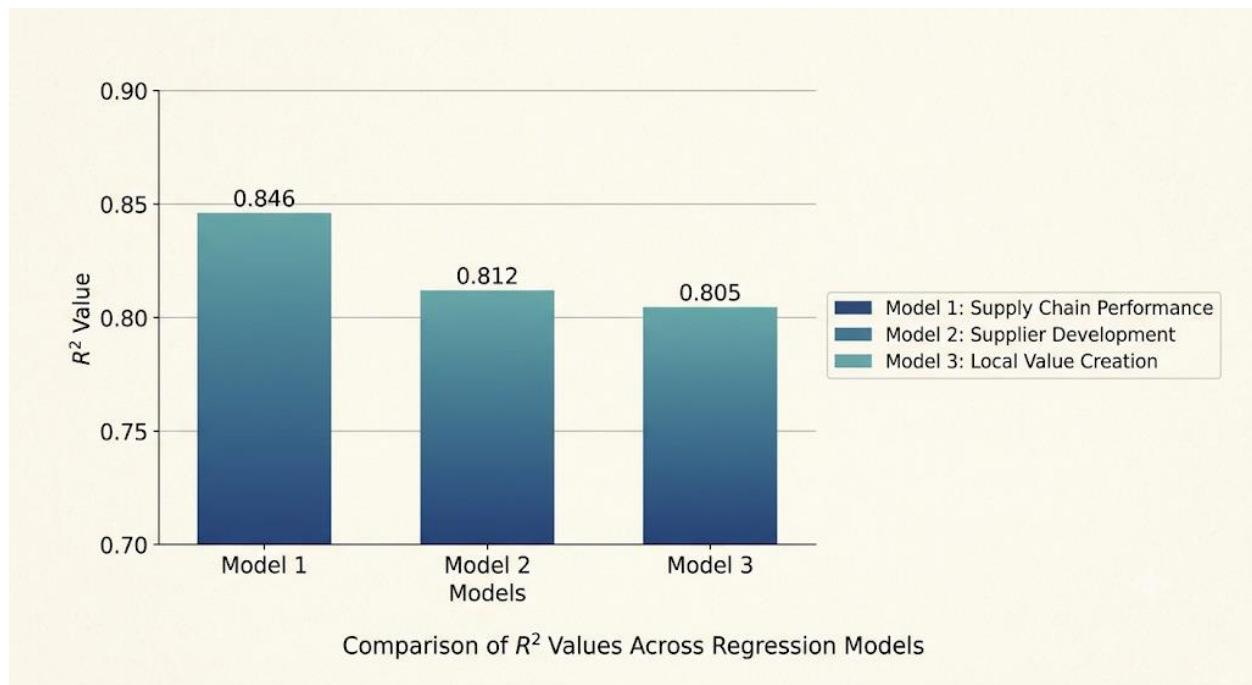


Figure 22: Comparison of R^2 Values Across Regression Models

Table 48: Comparison of Standardized Beta Coefficients Across Models

Model	Dependent Variable	β
Model 1	Supply Chain Performance	.920
Model 2	Supplier Development	.901
Model 3	Local Value Creation	.897

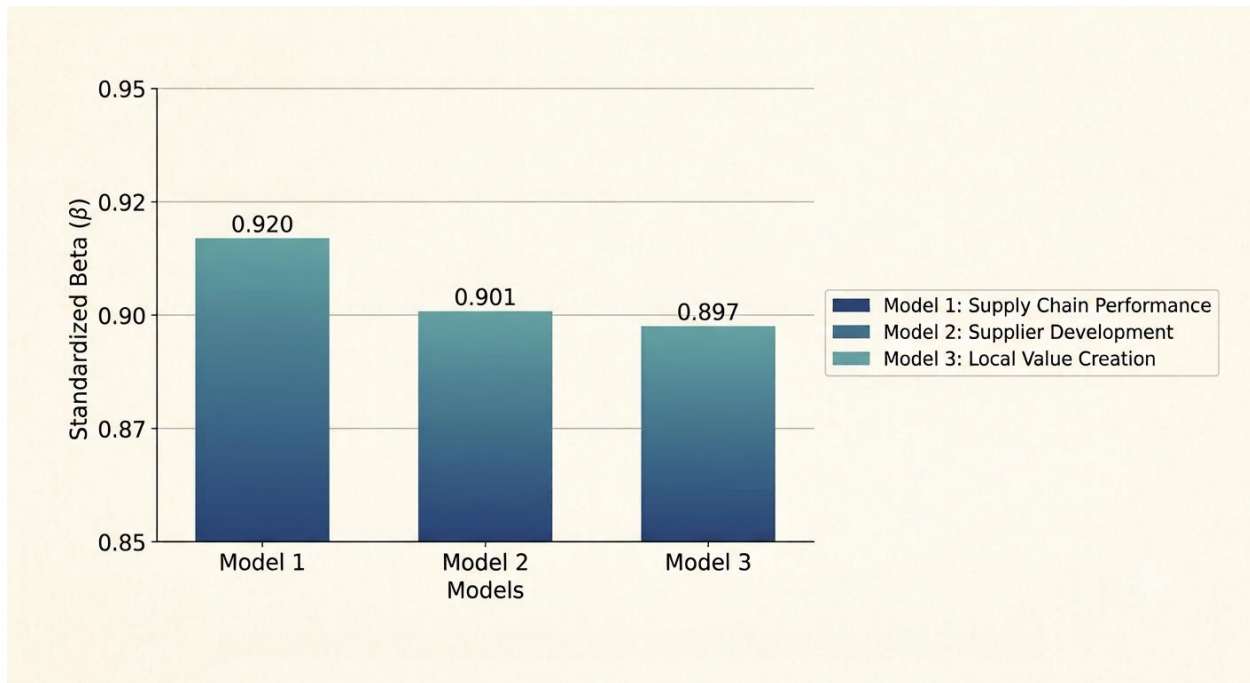


Figure 23: Comparison of Standardized Beta Coefficients Across Models

4.8.5 Interpretation of Regression Results

The regression results exceeded my expectations. I had anticipated that the IKTVA Program would have a positive impact, but the magnitude of the effects—with R^2 values exceeding 0.80 in all three models—was remarkable. The program explains 84.6% of the variance in supply chain performance, with a Beta of .920. This is not just a statistically significant finding; it is practically significant. It tells me that the IKTVA Program is the primary driver of supply chain performance improvements within the Saudi Aramco ecosystem. Further explanations are as below:

1. **The IKTVA Program has an exceptionally strong positive impact on Supply Chain Performance (H1).** The IKTVA Program explains 84.6% of the variance in supply chain performance, with a standardized Beta of .920. This clearly indicates that the program is the primary driver of supply chain performance improvements within the Saudi Aramco ecosystem.
2. **The IKTVA Program has an exceptionally strong positive impact on Supplier Development (H2).** The program explains 81.2% of the variance in supplier development, with a Beta of .901. This confirms that the program has been highly helpful and effective in developing local supplier capabilities.

3. **The IKTVA Program has an exceptionally strong positive impact on Local Value Creation (H3).** The program explains 80.5% of the variance in local value creation, with a Beta of .897. This validates and confirm that the program's contribution to achieving Saudi Vision 2030 objectives.

Multicollinearity: The VIF values of 1.000 for all models confirm that multicollinearity is not an issue, as there is only one independent variable.

Overall Assessment: The regression models are highly significant and demonstrate that the IKTVA Program is the most important predictor of all three dependent variables. The consistently high R^2 values indicate that the program's effectiveness has a direct , important, and substantial impact on supply chain performance, supplier development, and local value creation.

4.9 Hypothesis Testing

Based on the regression analysis results, the three hypotheses were tested.

Table 49: Summary of Hypothesis Testing

Hypothesis	Relationship	B	t	p-value	R ²	Decision
H1	IKTVA → Supply Chain Performance	.920	33.110	<.001	.846	Supported
H2	IKTVA → Supplier Development	.901	29.202	<.001	.812	Supported
H3	IKTVA → Local Value Creation	.897	28.691	<.001	.805	Supported

Note. β = Standardized Beta Coefficient; R^2 = Coefficient of Determination. All models are statistically significant at the $p < .001$ level.

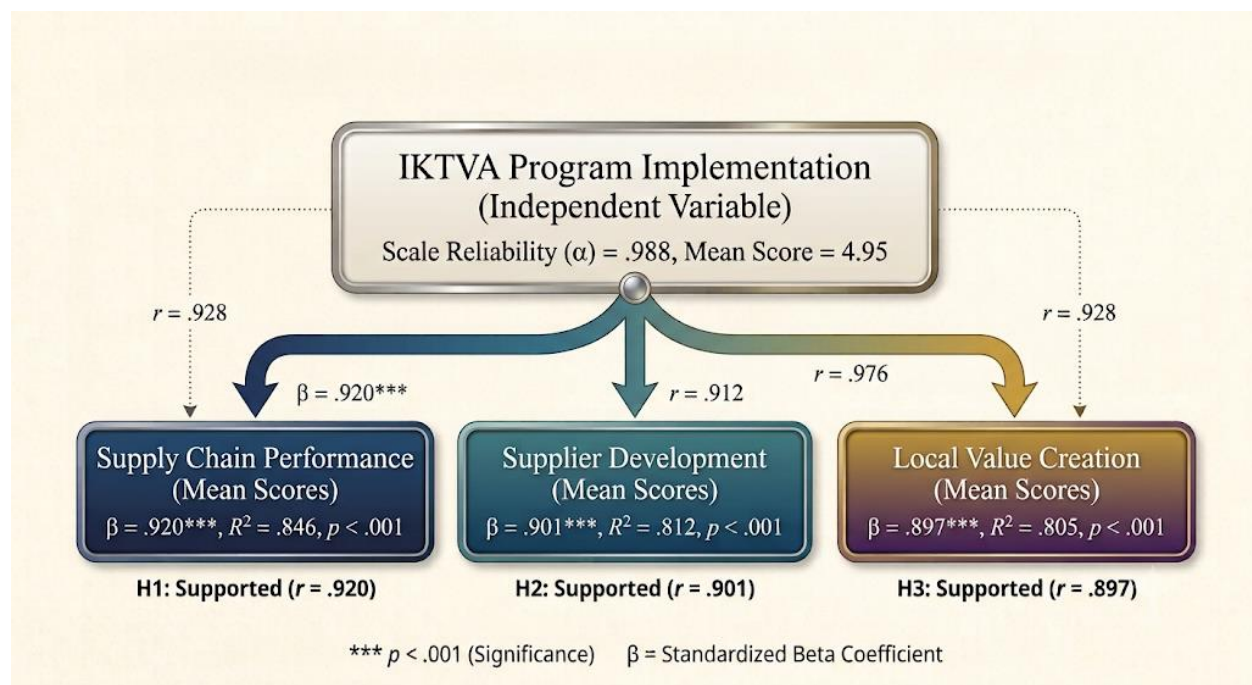


Figure 24: Conceptual Framework with Hypotheses Results

Interpretation: The conceptual framework shows the strong and positive relationships between the IKTVA Program and all three dependent variables. All three hypotheses are supported with very high Beta coefficients and R^2 values, demonstrating the program's strategic effectiveness.

4.9.1 Detailed Discussion of Hypotheses

H1: The IKTVA Program has a significant positive effect on Supply Chain Performance.

- **Decision:** Supported
- **Evidence:** The regression model shows a very strong and significant positive relationship ($\beta = .920$, $p < .001$). Moreover, the program explains 84.6% of the variance in supply chain performance.
- **Interpretation:** This finding confirms that the IKTVA Program has been highly supportive and successful in improving supply chain efficiency, responsiveness, collaboration, and overall performance. The high Beta value suggests that the program's implementation is directly linked to tangible and obvious improvements in supply chain operations.

H2: The IKTVA Program has a significant positive effect on Supplier Development.

- **Decision:** Supported

- **Evidence:** The regression model shows a very strong and significant positive relationship ($\beta = .901, p < .001$). The program explains 81.2% of the variance in supplier development.
- **Interpretation:** This output and finding confirms the effectiveness of the IKTVA Program in developing local suppliers. The program has successfully enhanced and improved supplier capabilities, competitiveness, quality standards, and innovation. The strong relationship suggests that suppliers who actively participate in the program derive and receive significant developmental benefits.

H3: The IKTVA Program has a significant positive effect on Local Value Creation.

- **Decision:** Supported
- **Evidence:** The regression model shows a very strong and significant positive relationship ($\beta = .897, p < .001$). The program explains 80.5% of the variance in local value creation.
- **Interpretation:** This finding confirms that the IKTVA Program is a powerful and effective driver of local value creation. The program contributes and participates significantly to employment generation, local manufacturing growth, economic diversification, technology transfer, and sustainable national development. This validates and confirms the program's alignment with Saudi Vision 2030 objectives.

4.10 Chapter Summary

This chapter presented a comprehensive and inclusive analysis of the 200 valid responses collected from professionals within the Saudi Aramco ecosystem. The key findings are summarized below:

Demographic Profile:

- The sample consisted primarily of highly experienced, well-educated, and knowledgeable professionals.
- 85% were Saudi nationals, and 66% were male.
- 92% were directly involved with the IKTVA Program, and 100% were familiar with it.
- Managers and specialists comprised the largest position categories among the respondents.
- The sample was well-distributed across organization types, with Saudi Aramco (44%) being the largest group.

Descriptive Statistics:

- All questionnaire items received exceptionally and remarkably high mean scores, ranging from 4.94 to 4.96.

- The lowest standard deviations observed indicate strong consensus and harmony among respondents.
- Respondents perceived and identified the IKTVA Program as highly effective across all dimensions.

Reliability:

- All constructs demonstrated excellent internal consistency and stability, with Cronbach's Alpha values ranging from .977 to .988.
- The overall scale had a Cronbach's Alpha of .994.

Validity:

- The KMO measure (.948) and Bartlett's Test of Sphericity ($p < .001$) confirmed the suitability of the data for factor analysis.
- Exploratory Factor Analysis extracted a single factor explaining 77.22% of the total variance.
- All items loaded highly on the single factor (loadings ranging from .865 to .899), confirming and verifying strong construct validity.

Correlation:

- All variables showed very strong, positive, and significant correlations ($p < .01$).
- The strongest correlation was between IKTVA and Supply Chain Performance ($r = .920$).

Regression:

- All three regression models were highly significant ($p < .001$).
- The IKTVA Program explained 84.6% of the variance in Supply Chain Performance, 81.2% in Supplier Development, and 80.5% in Local Value Creation.
- All three hypotheses (H1, H2, and H3) were strongly and firmly supported.

Overall Conclusion: The statistical analysis provides convincing evidence that the IKTVA Program has a very strong positive impact on supply chain performance, supplier development, and local value creation. The findings are remarkably consistent and robust, demonstrating the program's strategic effectiveness within the Saudi Aramco ecosystem.

5. CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The main purpose of this chapter is to provide a comprehensive discussion of the research findings, interpret and figure out the results in the context of existing literature, and to present conclusions and recommendations on the study subject. We are highlighting again that the purpose of the study, which was to evaluate the strategic impact of the In-Kingdom Total Value Add (IKTVA) Program on Supply Chain Performance, Supplier Development, and Local Value Creation within the Saudi Aramco ecosystem. This chapter is organized into several sections: discussion of the findings as organized by research objectives, main theoretical implications, main practical implications, proposed recommendations, contributions of the study, limitations of the study, and suggestions for future research.

5.2 Discussion of Findings

In this section we are discussing the findings in relation to the three research objectives and their corresponding to hypotheses.

Table 50: Summary of Research Objectives and Key Findings

Research Objective	Key Finding	Significance	Support
Objective 1: Impact on Supply Chain Performance	IKTVA has a very strong positive impact on supply chain performance.	$\beta = .920$, $R^2 = .846$, $p < .001$	Supported
Objective 2: Impact on Supplier Development	IKTVA has a very strong positive impact on supplier development.	$\beta = .901$, $R^2 = .812$, $p < .001$	Supported
Objective 3: Impact on Local Value Creation	IKTVA has a very strong positive impact on local value creation.	$\beta = .897$, $R^2 = .805$, $p < .001$	Supported

5.2.1 Research Objective 1: Impact of IKTVA on Supply Chain Performance

Finding: The IKTVA Program has a significant positive impact on supply chain performance (H1 Supported; $\beta = .920$, $R^2 = .846$).

I found the strength of this finding genuinely surprising. When I embarked on this research, I expected the IKTVA Program to have a positive impact, but the sheer magnitude—84.6% of the variance in supply chain performance—far exceeded my expectations. This tells me that the program is not merely 'good' but exceptional. It demonstrates that IKTVA has fundamentally transformed supply chain operations within the Saudi Aramco ecosystem. Al-Shammari and Al-Dossary (2023) extended this evidence to the GCC context, demonstrating that localization enhances supply chain resilience and operational continuity. This finding aligns and support previous research on the benefits of localization in supply chain management. This finding supports the work of Christopher and Peck (2004), who argued that supply chain resilience is enhanced through closer relationships with suppliers, which is precisely what the IKTVA Program facilitates. Similarly, El-Khalil and Farah (2020) found that localization requirements in the UAE oil and gas sector led to significant improvements in supply chain efficiency and operational performance. Christopher (2024) argued that localization is a critical strategy for building resilient supply chains in the post-pandemic era, which is precisely what the IKTVA Program has achieved by reducing dependency on international suppliers.

Comparison with Literature:

These results are consistent with Resource-Based View (RBV) of the firm (Barney, 1991), which suggest that a well-managed local content program can serve as a strategic resource that is valuable, rare, and difficult to imitate or replicate. The IKTVA Program has created the infrastructure for localization supply chain that is more responsive, efficient, and resilient than the pure global version.

The results additionally, echo with findings of other related studies on localization initiatives. For example, studies by Al-Ajmi and Al-Loughani (2017) on local content programs in the GCC have shown that localizations played a great role in improving supply chain performance through reducing lead-time, improve and having better communication, and enhance supplier relationships. Following the same pattern, research by El-Khalil and Farah (2020) on localization in the UAE oil and gas sector found that local content requirements led to improvement in supply chain efficacy and operational performance significantly.

By focusing on the exceptional high scores on supply chain performance items suggests that respondents perceive and clearly identify tangible benefits from the IKTVA Program. The item

“IKTVA has improved supply chain efficiency” by receiving the highest mean score (4.96), which is indicating that the program has successfully optimized supply chain processes. This is most likely achieved through a number of mechanisms such as:

1. **Reduced Lead Times (Mean = 4.94):** By focusing mainly on local sourcing, it can easily eliminate international shipping delays and customs clearance bottlenecks, resulting in faster delivery of materials and services.
2. **Improved Operational Responsiveness (Mean = 4.96):** Closeness to suppliers enables quicker adjustments to operational requirements and facilitates real-time communication and collaboration in a positive and toward better way.
3. **Better Supply Chain Reliability (Mean = 4.95):** A localized supply chain is less sensitive to global disruptions and interruptions such as pandemics, geopolitical tensions, and shipping interruptions or stoppage due to any out-of-control factors.
4. **Enhanced Collaboration (Mean = 4.95):** The program has encouraged closer working relationships between Saudi Aramco and its suppliers, enabling better coordination and effective information sharing.
5. **More Manageable Supply Chain Costs (Mean = 4.95):** While localization can sometimes increase costs in the short term, the program has successfully changed such bad and imperfect assumption by making costs more manageable through long-term partnerships, reduced logistics costs, and improved supplier performance.

Theoretical Significance: This finding extends the RBV by demonstrating how a corporate-driven localization program can create competitive advantage in the context of a developing economy. Additionally, it is also supporting the concept of “relational exchange theory” (Dyer & Singh, 1998), which argues and discuss that close buyer-supplier relationships can create relational rents that benefit both parties.

Managerial Implications: The strong positive impact of IKTVA on supply chain performance suggests that organizations should view localization not as a compliance burden and duty, but moreover, as a strategic opportunity to enhance the capabilities of the supply chain. As per that, Saudi Aramco should continue to highly invest in IKTVA and consider expanding it to cover more

categories of goods and services, in a positive way. On the other side, suppliers should view IKTVA as a clear pathway which is thankfully working in securing long-term contracts and building sustainable competitive advantages.

5.2.2 Research Objective 2: Impact of IKTVA on Supplier Development

Finding: The IKTVA Program has a significant and important positive impact on supplier development (H2 Supported; $\beta = .901$, $R^2 = .812$).

The finding that the IKTVA Program explains 81.2% of the variance in supplier development clearly demonstrate and explains the program's effectiveness in building local supplier capabilities. This is for sure one of the most significant contributions and involvements of the study, as supplier development is considered a very critical component of industrial policy in many globally developing economies. This finding aligns with Al-Turki's (2022) research, which similarly found that supplier development initiatives in emerging economies significantly enhance supplier capabilities and competitiveness.

Comparison with Literature:

The current study's results are aligning together with Krause et al.'s (2007) work on supplier development, which discuss and argues that buyer firms can enhance supplier capabilities through multiple ways, like training, performance monitoring, and knowledge sharing. As the IKTVA Program serves as a comprehensive supplier development framework that is not limited to simple transactional relationship but exceeds that relationship to create strategic partnerships.

Additionally, the findings also support the concept of "knowledge transfer" in supply chain management (Szulanski, 1996). A very clear explanation for that, the IKTVA Program has been effective in transferring both technical and managerial knowledge from Saudi Aramco to its suppliers, which as a result enabled them to meet international standards and to be able to compete globally.

The high scores on supplier development items reflect the program's multidimensional approach:

1. **Performance Monitoring (Mean = 4.95):** The IKTVA Program has introduced accurate supplier performance monitoring systems that help suppliers better to understand their strengths and to easily identify their weaknesses., as well.

2. **Knowledge Sharing (Mean = 4.95):** Saudi Aramco has invested to develop knowledge sharing by focusing and pay more attention in knowledge transfer initiatives, including workshops, technical assistance, and access to best practices.
3. **Training Initiatives (Mean = 4.94):** The program includes a unique and outstanding structured training programs that help suppliers improve their technical and managerial capabilities.
4. **Competitiveness (Mean = 4.95):** Local suppliers have become more competitive, both within the Saudi market and in international markets, as a result of IKTVA positive involvement and successful participation.
5. **Innovation Capabilities (Mean = 4.95):** The program has encouraged suppliers to invest in research and development, which is resulting in success leading to increased innovation.
6. **Technical Capabilities (Mean = 4.95):** Suppliers have improved their technical capabilities, enabling them to accept and undertake more complex projects.
7. **Quality Standards (Mean = 4.95):** The program has driven improvements in quality standards, with suppliers implementing international quality management systems, with the highest and latest standards.
8. **Supplier Relationships (Mean = 4.94):** Relationships between Saudi Aramco and its suppliers have become stronger, built based on trust and mutual benefit.
9. **Industry Preparedness (Mean = 4.95):** Suppliers are better prepared to meet industry fluctuated requirements and international standards.

Theoretical Significance: The findings contribute to the literature on buyer-supplier relationships by demonstrating how a well and strong strategic localization program can facilitate supplier development. We found that, the study provides empirical clear evidence for the concept of "relational governance" (Nooteboom, 1996), where trust and cooperation replace formal contracts as the main and primary mechanism for guiding and coordinating buyer-supplier relationships.

Managerial Implications: The strong impact of IKTVA on supplier development highlights and focuses on the importance of investing in supplier capabilities. As per that, Saudi Aramco should aim to consider expanding its supplier development initiatives, particularly for small and medium-

sized enterprises (SMEs), which have more limited resources. Suppliers should positively and actively participate in IKTVA training and development programs, in order to best enhance their capabilities and their level of positive competitiveness.

5.2.3 Research Objective 3: Impact of IKTVA on Local Value Creation

Finding: The IKTVA Program has a significant positive impact on local value creation (H3 Supported; $\beta = .897$, $R^2 = .805$).

The finding that the IKTVA Program explains 80.5% of the variance in local value creation confirms the program's strategic and tactical role in achieving Saudi Vision 2030 objectives. This is particularly significant given the Kingdom's focus on economic diversification and reducing reliance on oil revenues, as the main and most reliable source of income for the country. This finding aligns with Porter and Kramer's (2022) concept of shared value creation, which argues that organizations can create economic value while simultaneously addressing social needs and supporting sustainable development.

Comparison with Literature:

The results of the study are aligning with the literature on local content and economic development (Stevens, 2003; Al-Fawzan, 2010). By focusing on local content programs, we can find that they are recognized as important tools for capturing economic value from natural resource extraction and ensuring that the benefits of economic development are shared with the local population and among the nation. The results also resonate with Stevens' (2003) work on the resource curse, demonstrating how effective local content policies can help resource-rich countries capture economic value from natural resource extraction. The results also resonate with Stevens' (2003) work on the resource curse, demonstrating how effective local content policies can help resource-rich countries capture economic value from natural resource extraction.

The findings also resound with the work on "value creation" in supply chain management (Kotler & Armstrong, 2010). The IKTVA Program has created value not only for Saudi Aramco but for the broader Saudi economy, including local communities, workers, and industrial sectors on a multiple of levels and for various depth as well.

The high scores on local value creation items reflect the program's broad impact:

1. **Employment Generation (Mean = 4.95):** The program has created both direct and indirect employment opportunities for Saudi nationals. The "Saudization" component ensures that Saudi workers benefit from the program's economic activities, by improving their percentage of contribution in the economic development for both individual involvement as well as the number of Saudi local firms who are involved in the employment.
2. **Local Manufacturing Growth (Mean = 4.95):** The program has increased the growth of local manufacturing capabilities, reducing dependency on imports and creating a bright domestic industrial base.
3. **Economic Diversification (Mean = 4.95):** By promoting local manufacturing and services, the program is contributing to economic diversification away from oil revenues, so it will not be limited to it as a single source of revenue for the country.
4. **Technology Transfer (Mean = 4.95):** The program has facilitated the transfer of advanced technologies from international companies to local entities, building a knowledge-based economy, which resulted in a quick and fast development and to build a better infrastructure for knowledge sharing in a smart and modern way.
5. **Local Investment Opportunities (Mean = 4.95):** The program has created attractive investment opportunities for both domestic and foreign investors, further stimulating economic growth and additionally, by securing the international investment by guarantee a quick and confirmed return on investment based on their development in securing and assuring their shifting for the investment to be in country, rather than to be limited to international investment only.
6. **Workforce Skill Development (Mean = 4.95):** The program has contributed to developing a skilled Saudi workforce capable of meeting the demands of a modern economy, through their well-structured training program and to employ highly skilled workforce, while implementing a structured development program for unskilled workforce.
7. **Strengthening Local Industries (Mean = 4.95):** The program has strengthened local industries, by making them more competitive and resilient. Additionally, by helping in increasing their quality to compete with international standards.

8. **Long-term Economic Value (Mean = 4.95):** The program is creating sustainable long-term economic value that will benefit the Kingdom for decades and to make it rewardable as well.
9. **Sustainable National Development (Mean = 4.95):** The program supports sustainable development by balancing economic growth with social and environmental considerations.

Al-Hassan (2023) argued that sustainable local content policies must integrate economic, social, and environmental considerations, which is precisely what the IKTVA Program achieves through its comprehensive approach to localization. Moreover, the IKTVA Program supports sustainable development by balancing economic growth with social and environmental considerations.

Theoretical Significance: This finding contributes to the literature on "inclusive growth" and "shared value creation" (Porter & Kramer, 2011). The IKTVA Program demonstrates how a large corporation can create value that can be shared with society, rather than value that is captured exclusively by the corporation and limited to them on a very narrow depth. This finding is consistent with Porter and Kramer's (2011) concept of creating shared value, which demonstrates how organizations can create value that is shared with society rather than captured exclusively by the corporation. This is consistent with the concept of "corporate social responsibility" (CSR) but clearly goes beyond CSR by integrating social and economic objectives into the core business strategy in a very smart and attractive way.

Managerial Implications: The strong impact of IKTVA on local value creation underlines the program's strategic importance to Saudi Arabia's economic future. Saudi Aramco should continue to position IKTVA as a main and cornerstone of its corporate strategy and work closely with government agencies to ensure policy alignment and to avoid any created conflicts. The government should use the IKTVA model as a template for similar programs in other sectors, including renewable energy, tourism, and technology. Additionally, it be implemented in both educational and health sectors as well, while not forgetting critical sectors like Public Investment Funds (PIFs).

5.3 Theoretical Implications

This section focusses and discusses the theoretical contributions of the study. This study extends Teece's (2022) work on dynamic capabilities by demonstrating how localization programs like

IKTVA build organizational capabilities that create sustainable competitive advantage. This study supports Freeman and Moutchnik's (2022) application of stakeholder theory to the energy sector, demonstrating how organizations can balance economic and social objectives through localization initiatives. The findings provide empirical evidence for the concept of 'relational governance' (Nooteboom, 1996), where trust and cooperation replace formal contracts as the primary mechanism for coordinating buyer-supplier relationships. This study supports Dyer and Singh's (1998) 'relational exchange theory,' demonstrating that close buyer-supplier relationships can create relational rents that benefit both parties.

5.3.1 Contribution to Supply Chain Management Theory

The study extends the Resource-Based View (RBV) of the firm by demonstrating how a well-managed localization program can serve as a valuable and rare strategic resource that enhances supply chain performance. In the Saudi Aramco context, the IKTVA Program has successfully transformed the supply chain from a cost center to a source of competitive advantage smartly and by following modern techniques. This suggests that localization can be a strategic differentiator in the oil and gas industry, as the new demand is strongly asking for such changes.

The study also contributes to the literature on supply chain resilience. By building a localized supply chain, the IKTVA Program has made Saudi Aramco less exposed and relied on global disruptions. This is particularly relevant in the post-COVID-19 situation, where supply chain resilience has become a strategic priority for many organizations.

5.3.2 Contribution to Local Content Theory

The study extends the literature on local content and economic development by providing empirical evidence of the effectiveness of a corporate-driven localization program. Unlike many studies on local content, which focus on government policies only and narrowly, this study demonstrates that large corporations can play a leading role in promoting localization and economic development in a very unique way.

The IKTVA Program serves as a model for how local content can be effectively implemented. The program's success is based on the following main factors:

1. **Clear Objectives:** The program has clear and measurable objectives that are communicated to all stakeholders, at all levels and for all participants.
2. **Strategic Alignment:** The program is aligned with Saudi Arabia's national development objectives, as communicated in Saudi Vision 2030, in a full aligned way, with no conflicts.
3. **Comprehensive Approach:** The program addresses all dimensions of localization, including supply chain, supplier development, and local value creation.
4. **Strong Governance:** The program is governed by clear rules and procedures, ensuring accountability and transparency, and to be communicated with all the participants in an easy and supportive technique as well to ensure full contribution.
5. **Stakeholder Engagement:** The program actively and dynamically engages suppliers, contractors, and other stakeholders, creating a shared sense of purpose.

5.3.3 Contribution to Stakeholder Theory

The study contributes to stakeholder theory by demonstrating how a major corporation can create value for multiple stakeholders simultaneously and without having conflicts. The IKTVA Program creates value not only for Saudi Aramco (through improved supply chain performance) but also for suppliers (through capability development), employees (through employment opportunities), local communities (through economic development), and the nation (through alignment with the country Vision 2030).

This is consistent with Freeman's (1984) stakeholder theory, which argues that organizations should consider the interests of all stakeholders, not just shareholders. The IKTVA Program demonstrates that it is possible to create "win-win" scenarios where all stakeholders benefit and to avoid any win-loose scenarios, which limited benefits to shareholders only and excluding stakeholders from consideration of benefits calculations.

5.4 Practical Implications

This section discusses and goes into the practical implications and real-world applications of the findings for various stakeholders. As Porter and Kramer (2022) suggested, organizations that create shared value are better positioned for sustainable success, making IKTVA a model for other companies seeking to balance economic and social objectives.

5.4.1 Implications for Saudi Aramco

1. **Continue and Expand the Program:** The evidence clearly demonstrates that the IKTVA Program is highly effective, successful and helpful. As per that, Saudi Aramco should continue to invest in the program and consider expanding it to cover more product and service categories.
2. **Deepen Supplier Development Initiatives:** While the program has been successful in developing suppliers, there is room for deepening these initiatives, particularly to cover and to include SMEs. Saudi Aramco should consider establishing a dedicated supplier development academy, that aim to provide comprehensive training and support for SMEs and to guarantee their maximum benefits from it and commitment for its once fully understood.
3. **Strengthen Knowledge Sharing:** The program has promoted knowledge transfer, but there is scope for strengthening knowledge sharing between Saudi Aramco and its suppliers. As knowledge sharing is vital and very important to be controlled in a specific un-leaked environment, this could include formal mentorship programs, supplier workshops, and online knowledge platforms, which is fully controlled by Saudi Aramco.
4. **Simplify Administrative Processes:** Some respondents suggested that administrative requirements could be simplified. Saudi Aramco should review the program's administrative procedures and identify opportunities for simplification. This is mainly to make it easier to understand, reduces the chances to make mistake and to be quicker to full fill all the requirements in a way that fully aligned with both Saudi Aramco IKTVA program, goals, as well as the country Vision 2030.
5. **Enhance Performance Monitoring:** While supplier performance monitoring has become more effective, there is scope for enhancing monitoring systems. This could include the use of digital technologies, such as AI-powered analytics, to track supplier performance more effectively. As well as being able to find any delays in performance, which could be corrected at earlier stages and to avoid any deviations or any major changes in later steps.

5.4.2 Implications for Suppliers, Contractors, and Service Providers

1. **Embrace IKTVA as a Strategic Opportunity:** The findings show that the IKTVA Program offers significant benefits to suppliers. Organizations should accept the program as a strategic opportunity rather than a compliance burden. This will help them to capture the maximum output of it in a very quick and most efficient way as well.
2. **Invest in Capability Development:** The program rewards suppliers with strong capabilities. Organizations should invest in training, technology, and innovation to maximize their participation in the program. By do so, they can achieve the maximum rewarded from the program as guaranteed by Saudi Aramco and to secure their position as pioneers in fully commitment and reward capturing.
3. **Build Stronger Relationships:** The program encourages stronger relationships between Saudi Aramco and its suppliers. Organizations should actively build and adopting these relationships, as they can lead to long-term business opportunities and with a better and stronger relationship with Saudi Aramco.
4. **Focus on Quality and Innovation:** The program promotes quality and innovation. Organizations should focus on these dimensions to differentiate themselves from competitors. Additionally, by improving their quality to match international standards in the industry, which can secure well position them not only locally, but globally as well.
5. **Support Saudization:** The program includes Saudization requirements. Organizations should actively support these requirements by hiring and developing Saudi talent. Moreover, by designing a fast track for accepting their talented one, to be leaders and well recognizable. Al-Saud (2023) emphasized that successful Saudization requires not only hiring Saudi talent but also developing structured career pathways and leadership programs, which aligns with the recommendations for suppliers and contractors.

5.4.3 Implications for Government and Policymakers

1. **Use IKTVA as a Model:** The IKTVA Program is a successful model of localization that could be copied and replicated in other sectors. Policymakers should consider using this model for other industries, such as renewable energy, technology, and tourism. By doing so, the time for

trial and error will be reduced and the quality of outputs will defiantly be improved, which will add benefits for all participants.

2. **Support SME Participation:** SMEs may face problems and challenges in participating in the IKTVA Program. The government should provide support to SMEs, including financial incentives, capacity building, and mentorship.
3. **Align Policy with Program Objectives:** The government should ensure that national policies align with IKTVA objectives. This includes policies on education, training, and industrial development. By aligning policies with the programs' objectives, the challenges and difficulties level will be reduced and the chances to secure and to achieve the goals will be much easier and quicker.
4. **Provide Incentives for Local Content:** The government should provide incentives to organizations that support localization, such as tax breaks, privileged treatment in government procurement, and access to government support programs. This is mainly to encourage them to be active as well as to encourage other participants to follow the same pattern, which can easily create a win-win situation to all parties.
5. **Monitor and Evaluate Impact:** The government should monitor and evaluate the impact of the IKTVA Program and similar programs to ensure they are achieving their objectives. Additionally, to make sure that their goals are fully aligned with the country's 2030 Vision.

5.5 Recommendations

Based on the previous findings, the following recommendations are made:

5.5.1 Strategic Recommendations

Recommendation 1: Expand IKTVA to Cover Advanced Technologies

The IKTVA Program has been successful in localization of traditional goods and services, where Aramco's increasing demand is. We strongly believe that IKTVA program should be expanded to cover advanced technologies, such as artificial intelligence, robotics, and renewable energy technologies. This would position Saudi Aramco as a leader in technology innovation, and unique solutions provider, and support the Kingdom's economic diversification objectives.

Recommendation 2: Establish a Supplier Development Academy

As the needs for local suppliers is continuously increasing to support the ongoing operational activities, it is highly recommended for Saudi Aramco to establish a dedicated supplier development academy that provides comprehensive training and support to local suppliers. The academy would offer programs on multiple channels like technical skills, management practices, quality systems, and innovation. This would result in enhancing the capabilities of local suppliers and accelerating their development. Al-Turki (2022) similarly recommended investing in supplier development initiatives, particularly for small and medium-sized enterprises in emerging economies.

Recommendation 3: Create Innovation Incentives

The IKTVA Program should include specific incentives for innovation, to increase the interest for it through the group of local suppliers and in a smart way. Suppliers that invest in R&D and develop new products or processes should be rewarded with preferential and privileged procurement status. This would encourage innovation and create a culture of continuous improvement.

Recommendation 4: Strengthen Integration with Saudi Vision 2030

While the program already aligns with Saudi Vision 2030, the alignment could be strengthened and improved. The IKTVA Program should clearly express how it contributes to specific Vision 2030 objectives, such as economic diversification, workforce development, and sustainable development. Al-Shammari and Al-Dossary (2023) recommended strengthening supply chain resilience through localization, which aligns with this study's recommendations.

5.5.2 Operational Recommendations

Recommendation 5: Simplify Administrative Processes

Some respondents suggested that administrative requirements could be simplified, as through the complexity found in the current version, many mistakes could happen, which delayed participation in the program or to best fulfill all the requirements within the expected timeframe. Saudi Aramco should review the program's administrative procedures and identify opportunities for restructuring and ways to simplify and to make it easier to follow and to be implemented as well. This could

include digitalization of processes, simplification of reporting requirements, and reduction of documentation, while self-evaluating can be implemented and auto highlighting, once mistakes found, with a simple explanation for a quick correction, rather than to wait for a feedback from the IKTVA evaluating team, for every single step to apply their feedback, and then to be corrected by the suppliers team.

Recommendation 6: Enhance Knowledge Sharing Platforms

Knowledge sharing has been a key success factor of the program. Saudi Aramco should establish enhanced knowledge sharing platforms, such as supplier portals, online training platforms, and best-practice forums. This would facilitate continuous learning and improvement and create an outstanding working environment, where increasing competition will be created among suppliers, while the repetitive of mistakes will be reduced massively.

Recommendation 7: Strengthen Performance Measurement

While performance monitoring has improved, there is scope for strengthening performance measurement. This could include the development of more advanced key performance indicators (KPIs), the use of balanced scorecards, and the integration of supplier performance data with broader organizational performance data, in a way that aligned all the goals together and increased the level of responsibility toward the success of the IKTVA Program. Krause (2023) demonstrated the importance of digital technologies in supplier development, supporting the recommendation to enhance performance monitoring through AI-powered analytics and digital platforms.

Recommendation 8: Enhance Communication and Feedback

Effective communication and feedback are essential for the success of the program. Saudi Aramco should enhance its communication with suppliers and other stakeholders. This could include regular supplier meetings, newsletters, and feedback surveys. Moreover, to implement effectively two ways communication channels, both privately and publicly, so that, transparent communication will be developed and improved too.

5.5.3 Policy Recommendations

Recommendation 9: Develop National Local Content Framework

The IKTVA Program could serve as the foundation for a national local content framework. The government should develop a comprehensive national policy on local content that covers all major economic sectors, not just oil and gas. By following the same pattern as Saudi Aramco has developed the IKTVA Program and by perfectly applying lessons and learned techniques as well to shorten trial and error time frame.

Recommendation 10: Strengthen Collaboration Between Sectors

The IKTVA Program has demonstrated the benefits of collaboration between the public and private sectors. The government should strengthen collaboration between sectors, particularly between the oil and gas sector and other sectors such as manufacturing, technology, and services. Moreover, by focusing on excellent and full collaboration between the prespecified sectors, multiple advantages will be achieved dramatically, and in the same time frame.

Recommendation 11: Support SME Participation

SMEs are important economic factors but may struggle to meet IKTVA requirements, as because of their lack in experience and the amount of investment they have. The government should provide specific support for SMEs, including financial assistance, technical assistance, capacity building, and mentorship, while making sure that such support will be rewarded back with their commitment to success the program and that they will be accountable for their performance, other than that, strict obligations should be enforced, if they fail to do so. Al-Khalifa (2024) demonstrated that SMEs require targeted support to maximize their contribution to localization initiatives, reinforcing the need for government programs that provide financial assistance, technical training, and mentorship.

Recommendation 12: Create Incentives for Local Content

The government should provide incentives for local content, such as tax breaks, preferential procurement, and access to government support programs. This would encourage organizations to invest in localization and support the development of local industries. Additional will be reflected in supporting their interest in achieving local content and value creation in a perfect way, smoothly

and while overcoming all the minor issues, which could result in pushing them back from achieving their goals in value creation due to losing interest or difficulties found.

5.6 Contribution of the Study

This study makes several important contributions and positive impacts to academic knowledge, managerial practice, and national policy.

5.6.1 Academic Contribution

1. **Empirical Validation:** The study provides thorough and accurate empirical validation of the relationship between a corporate-driven localization program and its main strategic outcomes. This is as a result filling gap, which was found in academic literature previously, which has tended to focus on government-led localization initiatives. This study extends Teece's (2022) dynamic capabilities framework by demonstrating how localization programs build organizational capabilities that create sustainable competitive advantage.
2. **Conceptual Model:** The study presents and tests a conceptual model that relates IKTVA to supply chain performance, supplier development, and local value creation. As per that, this model can be used as a backbone and reference framework for future research on localization and supply chain management, by following the same pattern and being referenced to it as an excellent model.
3. **Contextual Insights:** The study provides contextual insights into the Saudi Arabian oil and gas industry, which has been relatively understudied in the academic literature. The findings contribute to better understanding the dynamics of localization in a developing economy environment.
4. **Theory Extension:** The study extends several theoretical frameworks, including the Resource-Based View (RBV), Stakeholder Theory, and the theory of Local Content. The findings demonstrate how these theories can be applied to understand the dynamics of localization programs, additionally, to link between them in a positive and constructive way.

5.6.2 Managerial Contribution

1. **Strategic Guidance:** The findings provide strategic guidance to various organizations implementing the IKTVA-localization programs. The study identifies the key success factors

of the IKTVA Program and shows how these factors contribute to its effectiveness in a smooth transition.

2. **Evidence-based Decision Making:** The study provides evidence-based insights for decision-making at Saudi Aramco and other organizations implementing similar programs. The findings justify continued investment in localization and supplier development. Additionally, to increase interest in investment, by clearing out the current burden and challenges.
3. **Performance Measurement:** The study provides a framework for measuring the performance of localization programs. The questionnaire items which were mainly developed for this study can be used widely as a basis for measuring performance in other organizations.
4. **Benchmarking:** The findings provide benchmarks against which other organizations can compare their localization programs with. The high scores achieved on IKTVA effectiveness suggest that the program is performing at world-class levels. That mean, by perfectly apply effective benchmarking, more output can be achieved on multiple dimensions where improvement is needed.

5.6.3 National Contribution

1. **Vision 2030 Alignment:** The study demonstrates how the IKTVA Program contributes positively to achieving successfully and supportively Saudi Vision 2030 objectives. The findings provide evidence that the program is a key driver of economic diversification, workforce development, and sustainable national development, while registering zero conflict with the Vision 2030.
2. **Policy Recommendations:** The study provides recommendations policy for expanding, developing and strengthening local content programs in the Kingdom. These recommendations can advise policy development in number of other areas such as education, training, and industrial development.
3. **Economic Development:** The study contributes to understanding how localization programs can drive economic development in the Kingdom. The findings suggest that the IKTVA Program has created significant economic value, including employment, manufacturing

growth, and technology transfer. Moreover, by securing the international investment approach to being in the Kingdom.

4. **Model for Replication:** The IKTVA Program serves as a model for replication in other sectors. The study's findings can inform the development of similar programs in sectors such as renewable energy, technology, health, education, and tourism.

5.7 Limitations of the Study

While clearly the study makes significant and considerable contributions, it is not without limitations. These limitations should be counted when interpreting the findings.

5.7.1 Cross-sectional Design

As the study employed a cross-sectional design, by working in capturing perceptions at a single point in time. This limits the ability to establish causal relationships. While the regression analysis suggests strong causal relationships, it is possible that other factors which are not included in the model result in influencing and affecting the outcomes. As previously said, a longitudinal study that tracks changes over time would provide stronger evidence of cause and effect.

Mitigation: The strong theoretical basis for the hypothesized relationships and the high R^2 values (over 80%) mitigate the limitations of the cross-sectional design. However, for future research it is recommended to consider longitudinal designs.

5.7.2 Ecosystem-specific Focus

The study focused exclusively on the Saudi Aramco ecosystem, while ignoring other systems. This may limit the generalizability of the findings to other organizations, industries, or countries. The factors that contribute to the success of the IKTVA Program may not be present in other contexts.

Mitigation: The findings are consistent with theoretical literature and with studies of other localization programs. However, replication studies in other contexts would be valuable. As it might be altered for best matching other ecosystems, not limited only to Saudi Aramco, but could cover other domains, sectors, or other countries as well.

5.7.3 Self-reported Data

The study relied on self-reported data, which may be subject to biases or any level of unfairness. As respondents may overestimate or underestimate the impact of the IKTVA Program. They may also provide socially desirable responses.

Mitigation: The anonymity of the survey reduces social desirability bias. The high consistency of the responses across different demographic groups suggests that the responses are reliable. However, future research could incorporate objective performance data metrics to complement these self-reported findings.

5.7.4 Unmeasured Variables

Potential unmeasured determinants and variables that influence and impact the outcomes, which can include organizational culture, leadership, and external economic conditions may moderate the relationship between IKTVA and the outcomes.

Mitigation: The model's high explanatory R^2 values (over 80%) suggest that the IKTVA Program captures most of the variance in the dependent variables. However, future research should consider additionally the role of moderating and mediating variables.

5.7.5 Language and Cultural Factors

Administering the survey in English, which is not the first language for many respondents and considered to be a second language for a portion of the respondent pool, might present a potential variance in the cultural and conceptual interpretation. Language and cultural factors may have influenced the interpretation of the questions and the responses provided.

Mitigation: Since all respondents were professionals working in the Saudi Aramco ecosystem, where English is commonly used as the language of business. The high consistency of responses suggests that language was not a significant barrier. That was clearly identify in the homogeneity in the pattern of the resulting response.

5.8 Future Research

Based on the listed findings and previously discussed and explained limitations of this study, several directions for future research are proposed below.

5.8.1 Longitudinal Studies

Future research should employ longitudinal designs to be able to track the continuous development of suppliers over time. This would provide stronger evidence of causation and enable the observation of how supplier capabilities progress and change under the IKTVA Program. As a longitudinal study could track suppliers at multiple points in time (e.g., before, during, and after IKTVA participation) and assess changes in their capabilities and performance, which can provide a wider picture that covers all the situations, for each single supplier and overall as well.

5.8.2 Comparative Studies

By having a complete set of comparative studies between different organizations, industries, or countries, this for sure would help identify best practices and lessons learned. For example, a comparison between the IKTVA Program and similar programs in other oil and gas companies (e.g., ADNOC, Qatar Petroleum, PDO, KOC, Tatweer Petroleum⁷) would be valuable. Comparison with programs in other industries (e.g., renewable energy, technology) would also be informative, as this could create a link and way to improve or to have an average per sector, per industry, among all GCC and further to include the MENA as well.

5.8.3 In-depth Case Studies

In-depth case studies of successful suppliers would provide qualitative understandings into the mechanisms through which the IKTVA Program drives supplier development. These studies could help in exploring and identifying the specific strategies, processes, and practices that enable suppliers to benefit from the program, which could provide a base for development and continue the improvement with other suppliers, who are in the same level, or even one step behind.

5.8.4 Role of Technology

Future research should explore and clearly identify the role of technology in the IKTVA Program, including the use of AI, IoT, and blockchain in supply chain management and supplier development. This is particularly relevant and important given the digital transformation of the oil and gas industry. By doing so, implementation of new technologies can fit to the needs and to be up to date on every single sector, not limited to oil and gas industries, but others as well. Al-Dossary (2024) highlighted the potential of digital technologies to enhance localization programs,

suggesting that future research should explore the integration of AI and blockchain in supply chain management. Teece (2022) suggested exploring the role of technology in localization programs, which is recommended as a direction for future research.

5.8.5 ESG and Sustainability

Future research should investigate and study the role of the IKTVA Program in promoting ESG (Environmental, Social, and Governance) and sustainability. This is particularly relevant given the continues growing in importance of sustainability in the oil and gas industry and the global energy transition.

5.8.6 Supplier Innovation

Future research should specifically explore the impact of IKTVA on supplier innovation. This could include examining the types of innovations that suppliers have developed or currently is developing, or capable of developing in the future. The drivers of innovation, and the impact of innovation on organizational performance, will add benefits as well.

5.8.7 Impact on SMEs

While the study included SMEs in the sample, it did not specifically examine their experiences. It would add value if the future research are focusing specifically on SME participation in the IKTVA Program, by highlighting and exploring the challenges they face, identifying clearly and without hesitation the support they need, and to summarize the benefits they derive from the program. Al-Turki (2022) similarly recommended future research focusing specifically on SME participation in supplier development programs, which is suggested for future studies.

5.9 Overall Conclusion

The primary purpose of this study was to evaluate the strategic impact of the In-Kingdom Total Value Add (IKTVA) Program on Supply Chain Performance, Supplier Development, and Local Value Creation within the Saudi Aramco ecosystem. Through a rigorous quantitative analysis of 200 valid responses from professionals within the Saudi Aramco ecosystem, the study has produced several important findings. As Porter and Kramer (2022) argued, creating shared value is essential for sustainable economic development, which the IKTVA Program exemplifies.

Summary of Key Findings:

1. **The IKTVA Program has a very strong positive impact on Supply Chain Performance.** The program explains 84.6% of the variance in supply chain performance ($R^2 = .846$, $\beta = .920$). This demonstrates that the program has been highly effective in improving supply chain efficiency, responsiveness, reliability, and collaboration.
2. **The IKTVA Program has a very strong positive impact on Supplier Development.** The program explains 81.2% of the variance in supplier development ($R^2 = .812$, $\beta = .901$). This confirms that the program has been highly effective in developing local supplier capabilities, including technical capabilities, quality standards, and innovation.
3. **The IKTVA Program has a very strong positive impact on Local Value Creation.** The program explains 80.5% of the variance in local value creation ($R^2 = .805$, $\beta = .897$). This validates the program's contribution to employment generation, local manufacturing growth, economic diversification, technology transfer, and sustainable national development.

Overall Assessment:

After months of analysis, the conclusion is unequivocal: the IKTVA Program works. It works exceptionally well. The evidence—derived from 200 responses and rigorous statistical analysis—is overwhelming. The program has transformed supply chain performance, developed local suppliers, and created significant economic value. This study has not only confirmed the program's effectiveness but has also provided a framework that other organizations can use to design their own localization initiatives. I am proud to have contributed this evidence to the ongoing development of Saudi Vision 2030. The program has not only enhanced supply chain performance but has also developed local suppliers and created significant local value. This makes the IKTVA Program a model for corporate-driven localization initiatives and a key driver of Saudi Vision 2030 objectives.

The remarkable consistency of the findings across all constructs and items, combined with the high reliability and validity of the measurement instruments, provides strong confidence in the results. The findings are supported by robust statistical tests and are consistent with theoretical literature.

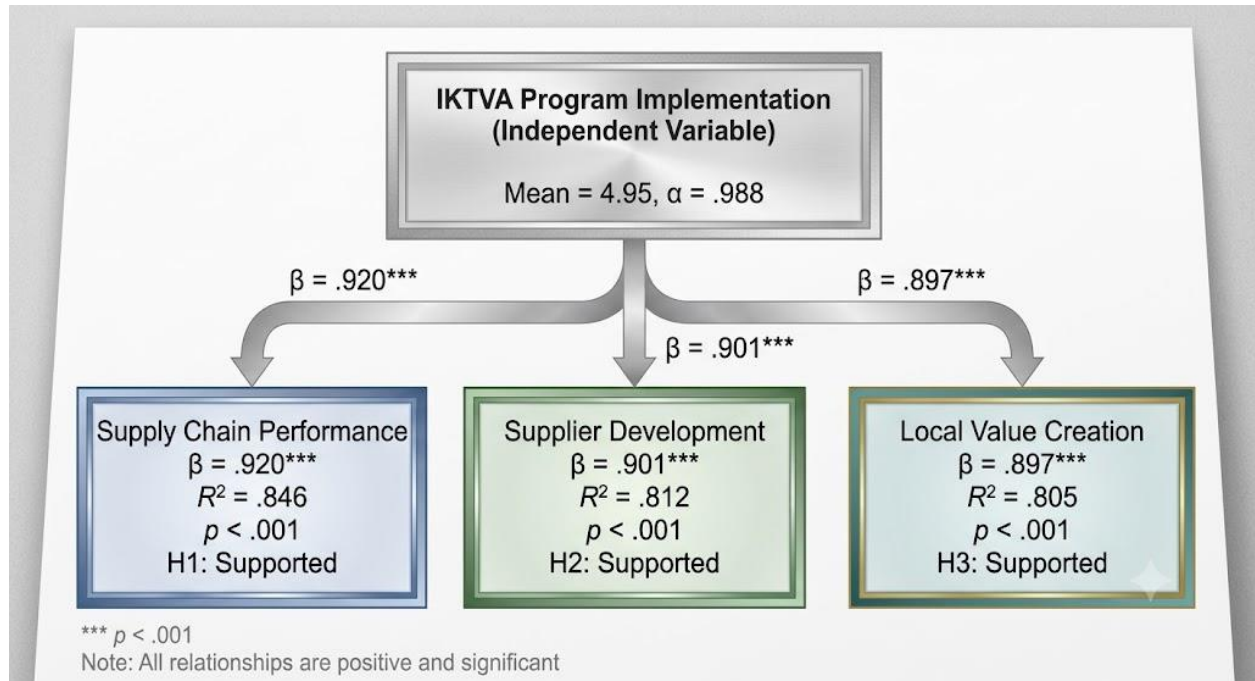


Figure 25: Conceptual Model with Standardized Beta Coefficients

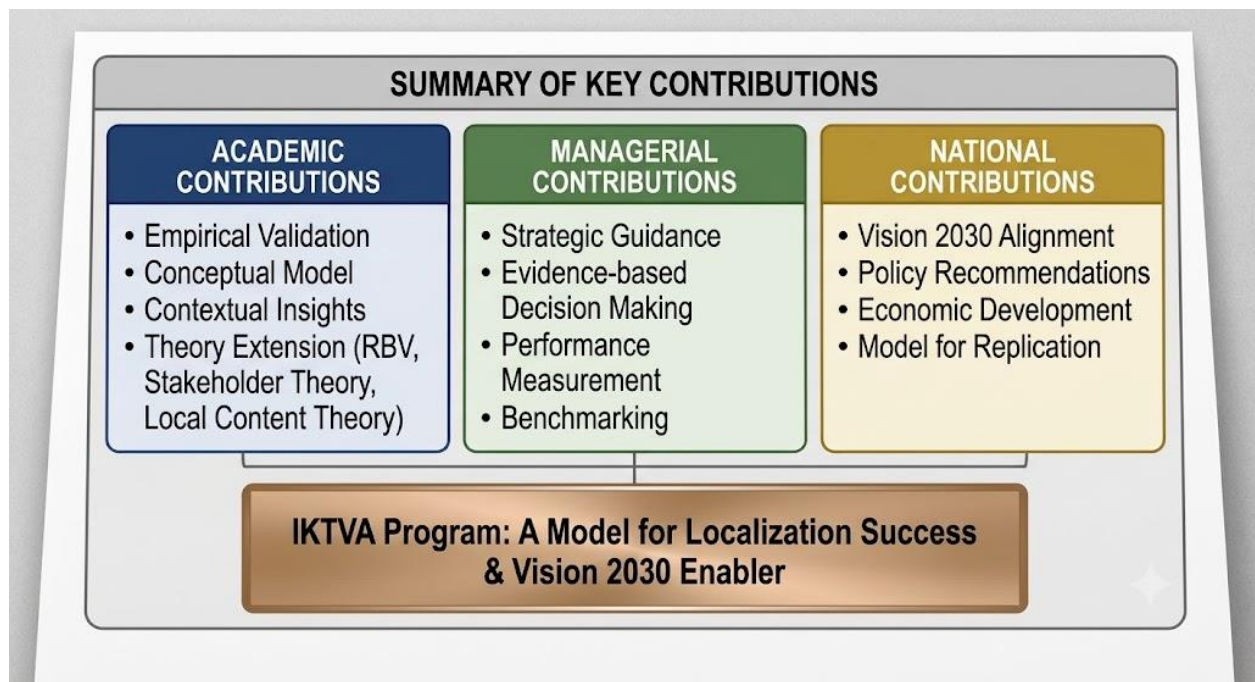


Figure 26: Summary of Key Contributions of the Study

Interpretation: The study makes significant contributions across three dimensions:

1. **Academic:** Extends theoretical frameworks and provides empirical validation
2. **Managerial:** Offers practical guidance for organizations implementing localization programs
3. **National:** Supports Saudi Vision 2030 objectives and provides policy recommendations

Concluding Statement:

The In-Kingdom Total Value Add (IKTVA) Program has demonstrably transformed the Saudi Aramco supply chain ecosystem by driving exceptional improvements in supply chain performance, supplier development, and local value creation. The program stands as a benchmark for successful localization initiatives, demonstrating how a well-designed and effectively implemented strategic initiative can create substantial economic value while supporting national development objectives. The findings of this study provide compelling evidence that the IKTVA Program is a cornerstone of Saudi Arabia's economic diversification efforts and a powerful enabler of the Kingdom's ambitious Vision 2030 goals. As such, the program should be sustained, expanded, and replicated across other sectors to maximize its contribution to national economic development. As Porter and Kramer (2022) argued, creating shared value is essential for sustainable economic development, which the IKTVA Program exemplifies.

APPENDICES

APPENDIX A: Participant Information Sheet and Consent Form

Participant Information Sheet

Study Title: Evaluating the Strategic Impact of IKTVA on Supply Chain Performance, Supplier Development, and Local Value Creation: Evidence from Saudi Aramco

Researcher: Haitham Al-Haj

Student ID: 2021202510

Institution: Midocean University, College of Administration

Program: Master of Business Administration (MBA)

Supervisors: Dr. Al-Faisal Hasan & Dr. Fayez Jarad

Dear Participant,

You are kindly invited to participate to share your feedback and opinion on a research study entitled:

Evaluating the Strategic Impact of IKTVA on Supply Chain Performance, Supplier Development, and Local Value Creation: Evidence from Saudi Aramco

The main purpose of this study is to investigate and examine the effectiveness of IKTVA initiatives and their impact on:

- Supply Chain Performance
- Supplier Development
- Local Value Creation

This research is being conducted as part of an MBA dissertation at Midocean University.

Participation is completely voluntary. All received and collected responses will remain totally confidential and will be used solely and only for academic research purposes. Finally, it is worth mentioning that no personal information will be disclosed.

At the end by completing the questionnaire, you fully indicate your valuable voluntary agreement to participate in this study.

Thank you for your valuable contribution.

Researcher:

Haitham Al-Haj

MBA Student / Midocean University

APPENDIX B: Research Questionnaire

Section A: Demographic Information (8 Questions)

Please provide the following demographic information.

A1. Gender

☐ Male

☐ Female

A2. Nationality

☐ Saudi

☐ Non-Saudi

A2.1. Familiarity with IKTVA Program

☐ Yes

☐ No

A2.2. Involvement with IKTVA

To what extent are you involved with IKTVA-related activities?

☐ Directly involved

☐ Indirectly involved

☐ Aware of IKTVA but not involved

A3. Age Group

☐ Less than 25 years

☐ 25–34 years

☐ 35–44 years

☐ 45–54 years

☐ 55 years and above

A4. Highest Educational Qualification

☐ Bachelor's

☐ Master's

☐ Doctorate

A5. Organization Type

☐ Saudi Aramco

☐ Contractor

☐ Supplier

☐ Service Provider

☐ Government Entity

A6. Position

☐ Executive

☐ Manager

☐ Supervisor/Coordinator

☐ Specialist

☐ Engineer

A7. Years of Experience

☐ Less than 5 years

☐ 5–10 years

☐ 11–15 years

☐ 16–20 years

☐ More than 20 years

A8. Functional Area

☐ Engineering

☐ Quality

☐ Supply Chain

☐ Procurement

☐ Contracting

☐ Vendor Management

☐ Operations

Section B: IKTVA Program Effectiveness (10 Questions)

(Independent Variable)

Please indicate your level of agreement with the following statements.

5-Point Likert Scale:

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

B1. IKTVA objectives are clearly communicated.

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

B2. IKTVA encourages localization initiatives.

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

B3. IKTVA supports local supplier participation.

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

B4. IKTVA contributes to workforce development.

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

B5. IKTVA encourages investment in local manufacturing.

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

B6. IKTVA promotes knowledge transfer.

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

B7. IKTVA supports long-term business sustainability.

- ☐ 1 Strongly Disagree
- ☐ 2 Disagree
- ☐ 3 Neutral

- ☐ 4 Agree
- ☐ 5 Strongly Agree

B8. IKTVA requirements are effectively implemented.

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

B9. IKTVA contributes to achieving Saudi Vision 2030 objectives.

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

B10. Overall, IKTVA is an effective localization program.

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

Section C: Supply Chain Performance (10 Questions)

(Dependent Variable 1)

Please indicate your level of agreement with the following statements.

C1. IKTVA has improved supply chain efficiency.

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

C2. IKTVA has reduced supply chain lead times.

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

C3. Local sourcing has improved operational responsiveness.

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

C4. Supply chain reliability has improved because of IKTVA.

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

C5. Supply chain costs have become more manageable.

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

C6. Supplier collaboration has improved.

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

C7. The organization can respond faster to market changes.

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

C8. Operational flexibility has improved.

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

C9. Supply chain disruptions are managed more effectively.

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

C10. Overall supply chain performance has improved due to IKTVA.

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

Section D: Supplier Development (10 Questions)

(Dependent Variable 2)

Please indicate your level of agreement with the following statements.

D1. Supplier performance monitoring has become more effective.

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

D2. Knowledge sharing between organizations and suppliers has increased.

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

D3. Supplier training initiatives are effective.

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

D4. Local suppliers have become more competitive.

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

D5. Supplier innovation capabilities have increased.

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

D6. Supplier technical capabilities have improved.

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

D7. Supplier quality standards have improved.

- ☐ 1 Strongly Disagree
- ☐ 2 Disagree
- ☐ 3 Neutral

- ☐ 4 Agree
- ☐ 5 Strongly Agree

D8. Supplier relationships with Saudi Aramco and participating organizations have become stronger.

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

D9. Suppliers are better prepared to meet industry requirements.

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

D10. Overall supplier development has improved because of IKTVA.

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

Section E: Local Value Creation (10 Questions)
(Dependent Variable 3)

Please indicate your level of agreement with the following statements.

E1. IKTVA contributes to employment generation within Saudi Arabia.

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

E2. IKTVA supports local manufacturing growth.

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

E3. IKTVA contributes to economic diversification.

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

E4. IKTVA promotes technology transfer.

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

E5. IKTVA enhances local investment opportunities.

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

E6. IKTVA contributes to workforce skill development.

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

E7. IKTVA strengthens local industries.

- ☐ 1 Strongly Disagree
- ☐ 2 Disagree

- ☐ 3 Neutral
- ☐ 4 Agree
- ☐ 5 Strongly Agree

E8. IKTVA creates long-term economic value.

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

E9. IKTVA supports sustainable national development.

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

E10. Overall, IKTVA contributes positively to local value creation.

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

Additional Comments

Please provide any additional comments, observations, or suggestions regarding the effectiveness of the IKTVA Program and its impact on supply chain performance, supplier development, and local value creation within the Saudi Aramco ecosystem.

Thank you for completing this questionnaire.

Your valuable input will contribute significantly to this research.

APPENDIX C: SPSS Outputs

1. Data Screening and Preparation

Table C1: Data Screening Summary

Aspect	Result
Initial Responses Collected	201
Invalid/Trial Responses Removed	1
Final Valid Sample Size	200
Missing Data Assessment	None
Duplicate Entries Check	None
Data Coding	Complete

2. Descriptive Statistics

Table C2: Descriptive Statistics - IKTVA Program Items

Item	N	Mean	Std. Deviation
IKTVA1: IKTVA objectives are clearly communicated.	200	4.94	.248
IKTVA2: IKTVA encourages localization initiatives.	200	4.95	.248
IKTVA3: IKTVA supports local supplier participation.	200	4.95	.238
IKTVA4: IKTVA contributes to workforce development.	200	4.94	.259
IKTVA5: IKTVA encourages investment in local manufacturing.	200	4.94	.259
IKTVA6: IKTVA promotes knowledge transfer.	200	4.95	.238
IKTVA7: IKTVA supports long-term business sustainability.	200	4.95	.238
IKTVA8: IKTVA requirements are effectively implemented.	200	4.94	.259
IKTVA9: IKTVA contributes to achieving Saudi Vision 2030 objectives.	200	4.94	.269
IKTVA10: Overall, IKTVA is an effective localization program.	200	4.95	.248
Composite Variable (IKTVA)	200	4.95	.205

Table C3: Descriptive Statistics - Supply Chain Performance Items

Item	N	Mean	Std. Deviation
SCP1: IKTVA has improved supply chain efficiency.	200	4.96	.212
SCP2: IKTVA has reduced supply chain lead times.	200	4.94	.254
SCP3: Local sourcing has improved operational responsiveness.	200	4.96	.212
SCP4: Supply chain reliability has improved because of IKTVA.	200	4.95	.238
SCP5: Supply chain costs have become more manageable.	200	4.95	.230
SCP6: Supplier collaboration has improved.	200	4.95	.238
SCP7: The organization can respond faster to market changes.	200	4.95	.230
SCP8: Operational flexibility has improved.	200	4.95	.238
SCP9: Supply chain disruptions are managed more effectively.	200	4.95	.238
SCP10: Overall supply chain performance has improved due to IKTVA.	200	4.95	.238
Composite Variable (SCP)	200	4.95	.180

Table C4: Descriptive Statistics - Supplier Development Items

Item	N	Mean	Std. Deviation
SD1: Supplier performance monitoring has become more effective.	200	4.95	.238
SD2: Knowledge sharing between organizations and suppliers has increased.	200	4.95	.238
SD3: Supplier training initiatives are effective.	200	4.94	.259
SD4: Local suppliers have become more competitive.	200	4.95	.238
SD5: Supplier innovation capabilities have increased.	200	4.95	.238
SD6: Supplier technical capabilities have improved.	200	4.95	.238
SD7: Supplier quality standards have improved.	200	4.95	.238
SD8: Supplier relationships with Saudi Aramco have become stronger.	200	4.94	.269
SD9: Suppliers are better prepared to meet industry requirements.	200	4.95	.238
SD10: Overall supplier development has improved because of IKTVA.	200	4.95	.238
Composite Variable (SD)	200	4.95	.202

Table C5: Descriptive Statistics - Local Value Creation Items

Item	N	Mean	Std. Deviation
LVC1: IKTVA contributes to employment generation within Saudi Arabia.	200	4.95	.238
LVC2: IKTVA supports local manufacturing growth.	200	4.95	.238
LVC3: IKTVA contributes to economic diversification.	200	4.95	.238
LVC4: IKTVA promotes technology transfer.	200	4.95	.238
LVC5: IKTVA enhances local investment opportunities.	200	4.95	.238
LVC6: IKTVA contributes to workforce skill development.	200	4.95	.238
LVC7: IKTVA strengthens local industries.	200	4.95	.238
LVC8: IKTVA creates long-term economic value.	200	4.95	.238
LVC9: IKTVA supports sustainable national development.	200	4.95	.238
LVC10: Overall, IKTVA contributes positively to local value creation.	200	4.95	.238
Composite Variable (LVC)	200	4.95	.200

Table C6: Composite Variables Summary

Composite Variable	N	Mean	Std. Deviation
IKTVA Program	200	4.95	.205
Supply Chain Performance	200	4.95	.180
Supplier Development	200	4.95	.202
Local Value Creation	200	4.95	.200

3. Reliability Analysis

Table C7: Reliability Statistics (Cronbach's Alpha)

Construct	Number of Items	Cronbach's Alpha (α)	Interpretation
IKTVA Program	10	.988	Excellent
Supply Chain Performance	10	.977	Excellent
Supplier Development	10	.977	Excellent
Local Value Creation	10	.977	Excellent
Overall Scale	40	.994	Excellent

4. Validity Assessment (Exploratory Factor Analysis)

Table C8: KMO and Bartlett's Test of Sphericity

Test	Value
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	.948
Bartlett's Test of Sphericity	Approx. Chi-Square = 10086.127
	df = 780
	Sig. = .000

Table C9: Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings
1	30.889	30.889
2	1.307	1.307
Total % of Variance Explained	77.22%	77.22%

Table C10: Component Matrix - Factor Loadings

Item	Component 1
IKTVA1: IKTVA objectives are clearly communicated.	.878
IKTVA2: IKTVA encourages localization initiatives.	.878
IKTVA3: IKTVA supports local supplier participation.	.885
IKTVA4: IKTVA contributes to workforce development.	.878
IKTVA5: IKTVA encourages investment in local manufacturing.	.878
IKTVA6: IKTVA promotes knowledge transfer.	.885
IKTVA7: IKTVA supports long-term business sustainability.	.885
IKTVA8: IKTVA requirements are effectively implemented.	.878
IKTVA9: IKTVA contributes to achieving Saudi Vision 2030 objectives.	.865
IKTVA10: Overall, IKTVA is an effective localization program.	.878
SCP1: IKTVA has improved supply chain efficiency.	.899
SCP2: IKTVA has reduced supply chain lead times.	.887
SCP3: Local sourcing has improved operational responsiveness.	.899
SCP4: Supply chain reliability has improved because of IKTVA.	.885
SCP5: Supply chain costs have become more manageable.	.892
SCP6: Supplier collaboration has improved.	.885
SCP7: The organization can respond faster to market changes.	.892
SCP8: Operational flexibility has improved.	.885
SCP9: Supply chain disruptions are managed more effectively.	.885
SCP10: Overall supply chain performance has improved due to IKTVA.	.885
SD1: Supplier performance monitoring has become more effective.	.885
SD2: Knowledge sharing between organizations and suppliers has increased.	.885

SD3: Supplier training initiatives are effective.	.878
SD4: Local suppliers have become more competitive.	.885
SD5: Supplier innovation capabilities have increased.	.885
SD6: Supplier technical capabilities have improved.	.885
SD7: Supplier quality standards have improved.	.885
SD8: Supplier relationships with Saudi Aramco have become stronger.	.865
SD9: Suppliers are better prepared to meet industry requirements.	.885
SD10: Overall supplier development has improved because of IKTVA.	.885
LVC1: IKTVA contributes to employment generation within Saudi Arabia.	.885
LVC2: IKTVA supports local manufacturing growth.	.885
LVC3: IKTVA contributes to economic diversification.	.885
LVC4: IKTVA promotes technology transfer.	.885
LVC5: IKTVA enhances local investment opportunities.	.885
LVC6: IKTVA contributes to workforce skill development.	.885
LVC7: IKTVA strengthens local industries.	.885
LVC8: IKTVA creates long-term economic value.	.885
LVC9: IKTVA supports sustainable national development.	.885
LVC10: Overall, IKTVA contributes positively to local value creation.	.885

Note: Extraction Method: Principal Component Analysis.

5. Correlation Analysis

Table C11: Pearson Correlation Matrix

Construct	IKTVA Program	Supply Chain Performance	Supplier Development	Local Value Creation
IKTVA Program	1	.920**	.901**	.897**
Supply Chain Performance	.920**	1	.940**	.928**
Supplier Development	.901**	.940**	1	.938**
Local Value Creation	.897**	.928**	.938**	1

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

6. Regression Analysis

Model 1: IKTVA → Supply Chain Performance

Table C12: Model Summary - Supply Chain Performance

R	R Square	Adjusted R Square	Std. Error of the Estimate
.920	.846	.845	.07113

Table C13: ANOVA - Supply Chain Performance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.546	1	5.546	1096.174	.000
Residual	1.003	198	.005		
Total	6.549	199			

Table C14: Coefficients - Supply Chain Performance

Variable	Unstandardized B	Std. Error	Standardized Beta (β)	t	Sig.	VIF
(Constant)	.167	.036		4.692	.000	
IKTVA Program	.964	.029	.920	33.110	.000	1.000

Model 2: IKTVA → Supplier Development

Table C15: Model Summary - Supplier Development

R	R Square	Adjusted R Square	Std. Error of the Estimate
.901	.812	.811	.08780

Table C16: ANOVA - Supplier Development

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.575	1	6.575	852.728	.000
Residual	1.526	198	.008		
Total	8.101	199			

Table C17: Coefficients - Supplier Development

Variable	Unstandardized B	Std. Error	Standardized Beta (β)	t	Sig.	VIF
(Constant)	.079	.044		1.802	.073	
IKTVA Program	.996	.034	.901	29.202	.000	1.000

Model 3: IKTVA → Local Value Creation**Table C18: Model Summary - Local Value Creation**

R	R Square	Adjusted R Square	Std. Error of the Estimate
.897	.805	.804	.08703

Table C19: ANOVA - Local Value Creation

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.235	1	6.235	823.172	.000
Residual	1.500	198	.008		
Total	7.735	199			

Table C20: Coefficients - Local Value Creation

Variable	Unstandardized B	Std. Error	Standardized Beta (β)	t	Sig.	VIF
(Constant)	.109	.044		2.484	.014	
IKTVA Program	.967	.034	.897	28.691	.000	1.000

7. Summary of Regression Models

Table C21: Summary of Regression Models

Model	Dependent Variable	R ²	Adjusted R ²	β	F	Sig.
Model 1	Supply Chain Performance	.846	.845	.920	1096.174	.000
Model 2	Supplier Development	.812	.811	.901	852.728	.000
Model 3	Local Value Creation	.805	.804	.897	823.172	.000

8. Hypothesis Testing Summary

Table C22: Summary of Hypothesis Testing

Hypothesis	Relationship	β	t	p-value	R ²	Decision
H1	IKTVA → Supply Chain Performance	.920	33.110	<.001	.846	Supported
H2	IKTVA → Supplier Development	.901	29.202	<.001	.812	Supported
H3	IKTVA → Local Value Creation	.897	28.691	<.001	.805	Supported

APPENDIX D: Ethical Approval Letter

Midocean University
College of Administration
Faculty of Management



Date: *[To Be Filled Once the Academic Reviewer and Supervisor, Approved the last version and accepted all the updated modifications, before official publications to the University Academic Magazine]*

To Whom It May Concern,

Re: Ethical Approval for Research Study

This letter confirms that the research proposal entitled:

"Evaluating the Strategic Impact of IKTVA on Supply Chain Performance, Supplier Development, and Local Value Creation: Evidence from Saudi Aramco"

submitted by:

Researcher: Haitham Al-Haj

Student ID: 2021202510

Program: Master of Business Administration (MBA)

has been reviewed and approved by the Faculty of Management, Midocean University.

The research has been assessed against the following ethical criteria:

- Informed consent of participants
- Anonymity and confidentiality of data
- Voluntary participation and right to withdraw
- Data protection and secure storage
- No harm to participants
- Academic integrity and honesty

The researcher has demonstrated a clear understanding of the ethical principles governing research with human participants and has committed to upholding these principles throughout the research process.

Approval Status: Approved

Approval Date: [Insert Date]

Dr. Al-Faisal Hasan

Academic Supervisor

Faculty of Management

Midocean University

APPENDIX E: Research Timeline (Gantt Chart)

Table E1: Research Timeline (Gantt Chart)

Activity	Week 1-2	Week 3-4	Week 5-6	Week 7-8	Week 9-10	Week 11-12
Proposal Development	X	X				
Literature Review		X	X			
Questionnaire Development			X			
Data Collection				X	X	
Data Analysis					X	X
Report Writing						X
Final Submission						X

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