# Foreign Investment Barriers and Operational Challenges in Saudi Arabia's Oil and Gas Services Sector: Implications for Vision 2030.


## Abstract:

Foreign investment in oil and gas services can support Saudi Arabia's diversification through domestic technical capability, yet formal market access does not ensure sustained operational participation. This paper examines the interfaces between investment conditions, customer qualification, localization, workforce readiness, logistics, contracting and digital governance. A purposive integrative review combines peer-reviewed research with official policy and corporate documents, alongside descriptive analysis of Aramco's reported iktva indicator for 2020–2024. The indicator increases from 57.5% to 67.0%, but its aggregate scope cannot establish supplier-level capability transfer, profitability or causal investment effects. The analysis proposes an investment-to-operation conversion framework connecting formal access, qualification readiness, operational execution and retained domestic value. Its propositions emphasize procedural clarity, capability-based localization and coordination across business functions. Practical recommendations include staged commitments, controlled evidence registers, role-specific workforce development and separate measurement of administrative readiness and technical learning. The paper's contribution is a testable framework and measurement agenda rather than an estimated ranking of barriers. Public evidence remains insufficient to quantify contractor-level impacts. Future research should combine confidential enterprise records with comparative and longitudinal designs, including unsuccessful entrants. Vision 2030 alignment is best assessed through persistent, competitive capabilities rather than registration counts or local spending alone.



**Keywords:** foreign direct investment; oilfield services; Saudi Arabia; Vision 2030; localization; supplier qualification; operational readiness.



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# 1 Introduction

Foreign investment in Saudi Arabia's oil and gas services sector presents a distinctive diversification problem. The industry supports hydrocarbon production, yet its associated capabilities can extend beyond extraction into equipment manufacturing, maintenance, logistics, digital services and professional management. The relevant policy question is therefore whether foreign participation creates transferable domestic capabilities or mainly supplies specialized inputs for existing production. This paper examines that question through the practical conditions under which international service companies enter, establish and sustain Saudi operations.

The unit of analysis is the foreign-invested service enterprise rather than the petroleum concession holder. Drilling contractors, equipment suppliers, maintenance providers and technical service businesses encounter investment rules alongside customer qualification and operational requirements. These layers differ in purpose and authority. A commercial opportunity may be legally accessible while remaining difficult to execute because personnel, equipment, cybersecurity controls or contractual documentation are unready. Treating every difficulty as a restriction on foreign ownership would obscure the mechanisms that actually determine investment performance.

Saudi Arabia's updated Investment Law sets out equal treatment under similar circumstances, investor protections, registration arrangements and obligations to comply with applicable legislation (Ministry of Investment, n.d.). Those provisions change the formal investment environment, but they do not establish that all activities are unrestricted or that registration alone enables every operational task. This distinction matters because market-entry decisions commonly involve several approvals and dependencies. The analysis consequently separates legal openness from the organization's ability to convert access into reliable service delivery.

The academic evidence also supports a more differentiated approach. Alfalih and Bel Hadj (2020) identify relationships between Saudi FDI and factors including market size, openness, oil prices and law and order. Their national time-series evidence does not identify barriers within individual drilling contractors. It does, however, show why resource availability alone is an incomplete explanation of investment. Understanding service-sector investment requires attention to institutional conditions and the organizational processes through which firms respond to them (Dunning, 1988; Meyer et al., 2009).

The contribution of this paper is a proposed investment-to-operation conversion framework. It links formal access, qualification readiness, operating capability and retained domestic value. The framework is intended to generate testable propositions and a practical measurement agenda, rather than to estimate causal effects from insufficient data. It also challenges the assumption that higher investment inflows automatically establish successful diversification. A service enterprise can increase domestic expenditure without transferring complex skills, while a smaller investment can potentially establish valuable engineering or maintenance capability.

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## 2 Aim Objectives and Research Questions

The aim is to explain how investment conditions and operating requirements jointly shape foreign participation in Saudi oil and gas services, and to identify responses consistent with capability-based diversification. Four objectives guide the analysis: distinguish investment restrictions from legitimate operational safeguards; synthesize evidence on regulatory, commercial, workforce and supply-chain constraints; develop an explicit framework connecting those constraints to enterprise performance; and propose measurable managerial and policy interventions without overstating the available evidence.

The research questions are: Which mechanisms can prevent formal investment access from becoming sustained operational participation? Under what conditions does localization strengthen capability rather than add avoidable administrative burden? How can contracting, workforce development and information governance improve investment conversion? What evidence would be needed to evaluate these relationships empirically? These questions focus on execution and additional domestic value, avoiding an assumption that foreign and local firms face identical costs or that every requirement constitutes discrimination.

# 3 Review Methodology

The study uses a purposive integrative literature and documentary review, supported by a limited descriptive analysis of published corporate indicators. This approach is appropriate to a question that spans investment economics, procurement governance and operational management. Snyder (2019) provides methodological guidance on review design and the importance of matching methods to research questions. The present review is exploratory and interpretive; it does not claim exhaustive coverage, a pooled effect estimate or a completed systematic database review.

Sources were located through targeted web searches and publisher or institutional pages accessed in October 2026. Search combinations included Saudi Arabia with foreign direct investment, institutional quality, oil and gas services, local content, supplier qualification, workforce localization, product conformity and cybersecurity compliance. Publisher searches covered ScienceDirect, SAGE and Taylor & Francis. Institutional searches covered the Ministry of Investment, IMF, World Bank, Aramco, SASO and the Ministry of Human Resources and Social Development. Subscription Scopus or Web of Science searches were not performed.

Eligibility was based on a source's identifiable authorship, relevance to the research questions and inspectable content. Saudi empirical investment studies were included for national context; published methodological and supply-network studies supported analytical design; official documents established stated requirements and reported indicators. General commentary, promotional material without traceable evidence and unverifiable journal claims were excluded. Older work was retained where it addressed a foundational policy mechanism. The resulting collection is a bounded analytical corpus rather than a representative sample of all published research.

Appraisal distinguished the function of each source. Peer-reviewed econometric studies were considered according to their unit of analysis, historical coverage and suitability for sectoral inference. Government publications were used to describe their own rules and services, not to prove implementation outcomes. Corporate publications supplied customer requirements and self-reported performance measures. Where only publisher abstracts or summaries were inspectable, interpretation was limited to those available statements. No independent audit of company indicators or legal implementation was undertaken.

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Extraction concentrated on five fields: the requirement or finding, the enterprise process affected, the proposed mechanism, the measurement implication and the boundary of inference. Sources were organized into access, qualification, localization, workforce, logistics, contracting and digital-governance themes. The synthesis then examined dependencies between themes, including whether an apparently minor documentary requirement might delay a commercially significant activity. This dependency analysis is an original analytical interpretation; it is not a reported result from surveyed Saudi service companies.

Numerical analysis is confined to Aramco's published iktva series for 2020–2024. Values were transcribed from its 2024 Annual Report, with the 2022–2024 observations checked against its sustainability reporting (Aramco, 2025a, 2025b). Changes are expressed as percentage points or relative percentage changes, with denominators explicitly identified. No regressions are estimated because five customer-level observations cannot support causal claims about national FDI, supplier profitability or employment. Table 1 identifies the principal evidence boundaries, while Figure 1 presents the descriptive series.

**Table 1 Evidence sources and boundaries**

| Evidence | Contribution | Boundary |
|---|---|---|
| Saudi FDI studies | Institutions, openness and employment context | National historical data; not contractor-level effects |
| Investment Law | Stated access and investor rights | Does not establish implementation performance |
| Aramco supplier guidance | Registration and qualification distinction | Customer-specific requirements; no award guarantee |
| Aramco iktva reporting | Five-year local-content indicator | Corporate aggregate; not domestic value added or FDI |
| SASO and MHRSD guidance | Conformity and workforce interfaces | Applicability depends on product and establishment |
| Review and network studies | Method and dependency interpretation | Conceptual transfer requires sectoral testing |

**Sources: Alfalih and Bel Hadj (2020, 2021); Samargandi et al. (2022); Ministry of Investment (n.d.); Aramco (2025a, n.d.-a); SASO (n.d.); MHRSD (n.d.-a); Snyder (2019); Ivanov and Dolgui (2020). Author synthesis.**

# 4 Literature and Policy Context

IMF (2024) contextualizes investment uncertainty without establishing enterprise specific operating costs.

Saudi investment research provides evidence that institutions and macroeconomic conditions are relevant to FDI, but its aggregation limits direct application to operational barriers. Samargandi et al. (2022) examine Saudi data from 1984–2018 and report roles for institutional quality and trade openness. Those relationships concern national inflows across activities. They do not establish whether a particular conformity certificate, recruitment process or contract term increases a service company's costs. The paper therefore uses macroeconomic findings as context rather than as contractor-level evidence.

The World Bank (2020) emphasizes policy predictability and regulatory risk in international investment decisions. Its multicountry findings support attention to clarity and reliability, but cannot determine the magnitude of Saudi oilfield-service barriers. For the present analysis, predictability has a practical meaning: firms should be able to identify applicable requirements, determine responsible authorities and plan the timing of approvals. A requirement can be stringent yet manageable when clear, while a modest requirement can become disruptive when its interpretation is uncertain.

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Local-content research highlights a related design problem. Macatangay (2016) examines how extractive-industry policies interact with supplier responses and administrative incentives. The relevant lesson is that procurement targets alone do not describe the productive capacity available to meet them. The World Bank's sectoral study likewise identifies mixed outcomes from local-content policies across jurisdictions (Tordo et al., 2013). These sources justify examining capability development, but neither supplies a current measurement of Saudi contractor compliance costs or establishes that localization is inherently inefficient.

Workforce outcomes also require qualification. Alfalih and Bel Hadj (2021) examine asymmetric relationships between FDI and employment, including conditioning roles for human capital and institutions. Their results caution against treating job creation as an automatic consequence of investment. Applied here, the implication is to examine training, retention and occupational competence alongside employment counts. The proposed link between those processes and drilling-service performance remains a hypothesis requiring organizational evidence, not an effect estimated by the national study.

Supply-network research supplies a complementary perspective. Ivanov and Dolgui (2020) consider viability across interconnected networks rather than recovery within one isolated chain. That distinction is useful when service providers depend simultaneously on imported components, local workshops, customer access and specialized personnel. The WTO (2021) review supplies historical trade facilitation context, rather than current product specific clearance rules. It suggests that optimizing one supplier's inventory may be insufficient when another dependency prevents deployment. The present framework adapts this network perspective to investment conversion; it does not reproduce their model or claim that their findings were derived from Saudi operations.

The policy setting also includes a measurement challenge. The Vision 2030 Annual Report describes revised Saudi FDI statistics and the significance of changes in methodology (Saudi Vision 2030, 2025). Apparent changes across historical releases can consequently reflect revised definitions or exceptional transactions as well as underlying investment behavior. This paper avoids constructing a combined FDI trend from incompatible releases. It instead asks which enterprise-level indicators could complement national statistics when assessing whether foreign service investment produces persistent operational and domestic capability gains.

# 5 Analysis of Investment and Operational Constraints

## 5.1 Formal Access and Administrative Coordination

The first constraint category concerns the distance between a stated investment entitlement and an executable operating arrangement. The Ministry of Investment's published law describes investor registration, excluded activities and coordination with authorities responsible for approvals (Ministry of Investment, n.d.). This structure implies that investment access and activity-specific authorization should be examined separately. A service company should map requirements to the intended legal entity, service scope and asset deployment rather than assume that a general entry decision settles all subsequent obligations.

A plausible friction mechanism is documentary dependency. If different applications require consistent ownership records, activity classifications or signatory information, an unresolved discrepancy can interrupt several processes. The problem is not necessarily excessive regulation; it may be weak synchronization between the firm's records and the requirements of different counterparties. A useful intervention would assign one controlled source for corporate information

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and designate responsibility for updates. Its effectiveness should be evaluated through correction rates and application cycle times, not assumed from software adoption.

Administrative coordination can also be misunderstood as a communication problem only. Translation and local advice may help, but an enterprise still needs to understand what each approval authorizes and what remains conditional. A process map should show prerequisite relationships, decision ownership and evidence of completion. Separating waiting time from internal preparation time is particularly important. Without that distinction, management may attribute delays to external institutions when incomplete submissions or late internal decisions are substantial contributing factors (UNCTAD, 2024).

A further operational distinction is between rule availability and decision predictability. Publishing a requirement helps the investor identify the expected evidence, but execution also depends on how unusual cases are handled. Companies should record clarification requests and the reasons for differing interpretations rather than reduce every episode to a single delay measure. Such records could reveal whether uncertainty originates in inconsistent guidance, novel business models or inaccurate applications. The proposed investigation would be strongest when both applicants and responsible institutions can review the underlying sequence.

### 5.2 Customer Qualification and Market Access

Aramco's supplier guidance distinguishes registration and qualification and explicitly states that completing them does not guarantee business (Aramco, n.d.-a). This is a critical commercial boundary. Legal establishment, customer eligibility and contract award represent different decisions. Foreign investors can therefore commit capital before obtaining a predictable revenue stream. The resulting exposure should be described as qualification and demand risk rather than automatically classified as a legal investment barrier. Its practical importance depends on the company's customer concentration and alternative market opportunities.

Qualification creates a sequencing problem when capabilities must be demonstrated before meaningful revenue begins. The investor may need staff, systems and facilities to establish readiness, but cannot assume that those commitments will secure work. A staged investment plan should distinguish expenditure essential to eligibility from expansion dependent on awarded demand. This would not eliminate commercial uncertainty. It would make the uncertainty visible and reduce the chance that a supplier-registration milestone is incorrectly presented to corporate management as an assured sales outcome.

Customer concentration magnifies the consequences of that distinction. Where one purchaser represents a large share of expected revenue, delays or changing service demand can affect the entire business case. The present review does not measure Saudi buyer concentration, so this mechanism is conditional rather than a sector-wide finding. Firms should calculate exposure using their own expected contract portfolio and analyze whether facilities or expertise can serve other customers. Reusable capability is economically different from an asset that has little value outside one contract.

An investor should also distinguish evidence of competence from evidence of prior market participation. Experience requirements may help buyers manage performance risk, yet new entrants can struggle to demonstrate locally relevant delivery histories. This is a potential entry mechanism, not an identified discriminatory practice. Research could examine whether alternative evidence, controlled trials or performance guarantees are available and commercially proportionate. The question is whether qualification procedures reliably identify capability, including that of unfamiliar firms, rather than whether experienced suppliers should receive less scrutiny.

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### 5.3 Localization and Domestic Capability

Aramco's reporting provides evidence of expanding local procurement content, not direct evidence of contractor profitability. Its iktva indicator rises from 57.5% in 2020 to 67.0% in 2024 (Aramco, 2025a). The series shows a 9.5 percentage-point increase. It does not reveal how gains are distributed across supplier categories or distinguish imported products sold through local entities from complex activities performed domestically. Those questions require more detailed procurement and value-added data than the public aggregate provides.

Localization can affect investment through both opportunity and cost. A foreign service enterprise may establish a workshop, train personnel or develop local suppliers, improving domestic responsiveness. It may also incur duplicated facilities, supplier-development expenditure or transition costs before demand is sufficiently stable. These are proposed mechanisms, not quantified outcomes of the series. The appropriate policy question is whether the investment creates competitive capability over time. Treating the entire adjustment cost as waste would ignore learning, while treating every local purchase as capability transfer would overstate development.

Capability-based localization should distinguish stages of technical responsibility. Procurement from a domestic intermediary, local assembly, component repair and independent engineering are different activities. Each can contribute value, but they imply different learning requirements and opportunities for future export. Investors and customers should specify which responsibility is being developed and how progression will be verified. Evidence might include repair authorizations, competence assessments, quality records and successful delivery beyond the founding customer. A spending ratio alone cannot establish those outcomes.

A second distinction concerns transition speed. Localization that outpaces verified supplier readiness may expose critical services to quality or delivery risk; indefinite reliance on imported expertise can prevent domestic learning. The proposed response is a conditional transition plan based on capability milestones rather than a universal schedule. Milestones should be technically meaningful and independently reviewable. Any temporary arrangement would remain subject to applicable policy and contractual requirements. The analysis proposes improved planning, not an exemption from existing obligations.

Partnership governance is another condition affecting localization outcomes. A local partnership can combine market knowledge with specialist expertise, but its developmental value depends on responsibilities and incentives. A partnership focused mainly on administrative facilitation may differ substantially from one with shared technical delivery. Researchers should examine who controls design decisions, who employs trainees and who retains operating knowledge. Management should define these responsibilities explicitly, because a local ownership connection alone does not reveal whether meaningful learning or independent productive capability has occurred (Kostova, 1999).

### 5.4 Workforce Localization and Operational Readiness

The Ministry of Human Resources and Social Development's Nitaqat calculator links localization calculations to establishment activity and workforce composition (MHRSD, n.d.-a). This prevents a defensible universal quota from being assigned to every oil and gas service company. Requirements must be checked against the actual business classification and applicable rules. For operational analysis, workforce composition is only one dimension. The ability to deploy personnel safely and competently also depends on role-specific training, experience, supervision and customer acceptance.

A practical research distinction is between recruited headcount and productive readiness. A newly hired employee may contribute immediately to some duties but require supervised development for

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others. The firm should therefore measure the interval between recruitment and independent task authorization, as well as retention after training. These indicators would clarify whether localization planning is supported by genuine skill development. They could also identify bottlenecks in training capacity without implying that Saudi employees are less capable or that foreign staff are automatically competent.

The Ministry's skills initiatives emphasize alignment between workforce preparation and market needs (MHRSD, n.d.-b). An enterprise-level response would integrate workforce planning with the anticipated service portfolio. Demand forecasts should translate into occupations, competence requirements and training pathways before mobilization. Staffing plans designed only around compliance dates may leave technical preparation late. Conversely, training without credible employment demand can produce qualifications that are underused. A coordinated approach should connect recruitment, customer requirements and opportunities for progressive technical responsibility.

Retention deserves separate analysis because capability accumulates through experience. If trained personnel leave before reaching advanced responsibility, the employer may repeat basic training while retaining little expertise. This mechanism can apply to all nationalities and should not be interpreted as a nationality-specific performance claim. Future studies should examine career progression, supervision, work schedules and recognition alongside compensation. Measuring the number of courses delivered would be insufficient to determine whether a workforce-development program improves operational reliability or creates transferable knowledge (OECD, 2022).

Training measurement should recognize the difference between attendance, assessment and demonstrated performance. Attendance confirms exposure to material; an assessment may establish understanding; supervised task completion shows whether knowledge can be applied in context. None alone captures sustained competence under changing operating conditions. A proposed workforce dashboard would keep these stages separate and document the basis for authorization. The same approach should apply to new international recruits and local trainees. This avoids assigning competence through nationality, previous employer reputation or certificates without practical verification.

### 5.5 Logistics Product Conformity and Asset Mobilization

SASO's product-tracking guidance distinguishes product registration, conformity certification, shipment certificates and self-declaration (SASO, n.d.). For service investors, this means the equipment plan should include a documented assessment of applicable conformity procedures. It does not mean that every drilling component follows the same route. Classification, product scope and current technical requirements must be checked individually. The operating consequence of poor preparation is a proposed dependency: equipment that is commercially available may still be unready for import or deployment.

The appropriate planning unit is therefore the deployable equipment package. Procurement should connect technical specification, documentation, transport, inspection and maintenance readiness. A lower purchase price may be offset by incomplete records or uncertain replacement availability. This is an analytical possibility rather than a measured Saudi cost comparison. Firms can test it by comparing total acquisition and deployment costs for actual equipment categories. Recording document-related holds separately from shipping delays would help identify whether an intervention should target conformity preparation, logistics capacity or supplier performance.

Resilience also requires considering what happens after first deployment. An imported asset with no qualified repair pathway can remain vulnerable even when its initial shipment is compliant. The

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enterprise should identify critical spares, approved substitutes and the conditions under which local repair is permitted. Building local maintenance capability could reduce dependencies, but only if quality and authorization requirements are satisfied. The supply-network perspective suggests examining these linked dependencies together, rather than treating import clearance as the final measure of equipment readiness.

Inventory policy must balance readiness against capital intensity. Holding every possible spare may reduce some disruption risks but increase storage, obsolescence and financing costs. A useful classification would distinguish safety-critical, production-critical and routinely replaceable items, subject to technical assessment. Researchers could then compare stocking decisions with actual failure and replenishment records. The implication is to match resilience expenditure to evidence of dependence and consequence. No optimal inventory level can be calculated from the public sources examined in this review.

### 5.6 Contracting Cash Flow and Allocation of Risk

Invoice readiness adds another interface. ZATCA distinguishes structured electronic invoices from scanned paper documents (ZATCA, n.d.). Suppliers should verify applicable requirements before configuring billing. This does not establish customer acceptance or payment timeliness; contractual approval and tax documentation remain separate controls.

Contracting influences whether an apparently attractive market produces sustainable investment returns. The review does not establish prevailing payment delays or contractual practices across Saudi oilfield services. Instead, it proposes examining the connection between contractual obligations and operating commitments. Mobilization expenditure, required staffing, acceptance conditions, variation procedures and payment triggers can create mismatches between cash outflow and cash recovery. Those mismatches are commercial risks that should be identified before commitments become difficult to reverse.

A contract-readiness review should test whether the operational team can produce the evidence required for acceptance and billing. The finance team may expect timely invoices while field personnel lack a clear process for recording approved work or changes. This internal coordination failure can resemble an external payment problem. Managers should track unbilled completed work, rejected submissions and disputed variations separately from overdue approved invoices. Such distinctions would support more accurate diagnosis and prevent general claims about customer payment behavior from replacing evidence.

Risk allocation should also be assessed for controllability. A supplier can reasonably manage obligations within its own processes, but uncertainty grows when delivery depends on approvals or access controlled by another party. Contracts should define interfaces, notification duties and the treatment of changes clearly, subject to professional legal review. The proposed benefit is improved predictability rather than the elimination of disputes. Any empirical evaluation should compare comparable contracts and account for project complexity before attributing performance differences to particular contractual provisions.

### 5.7 Digital Governance and Cybersecurity

Aramco's third-party cybersecurity program establishes assessment and certification arrangements linked to third-party classifications (Aramco, n.d.-b). Its significance for investment is organizational: the required controls can involve procurement, IT administration, contractual scope and evidence management. Treating certification as an isolated IT task may leave business functions unprepared to supply the necessary records. The relevant mechanism is a gap between nominal compliance

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ownership and the enterprise processes that determine actual access, data handling and security performance.

Digitalization may reduce repetitive work when data are consistent and responsibilities are clear. It can also reproduce poor processes more quickly. A compliance dashboard that displays an expired certificate correctly does not resolve the reasons renewal was missed. Investment in digital tools should therefore begin with data ownership, update rules and escalation responsibilities. Proposed performance measures include record completeness, renewal lead time and unresolved exceptions. These measures describe process quality; they should not be interpreted as direct evidence that cyber incidents have been prevented.

Integration creates its own safeguards. Personnel records, commercial information and operational documents need appropriate access restrictions and retention controls. Sharing everything across departments would undermine the security benefits sought from coordination. The proposed design is a controlled evidence register that identifies authoritative records and their owners while limiting access according to role. This arrangement would need to be checked against applicable legal and customer requirements. Its effect on investment conversion remains an empirical question rather than an assumed consequence of centralized information.

# 6 Descriptive Evidence and Proposed Framework

Figure 1 shows Aramco's reported iktva progression over five observations. The increase from 57.5% to 67.0% corresponds to approximately 16.5% relative growth in the indicator, calculated as 9.5 divided by 57.5. Annual increments are 1.5, 4.0, 2.0 and 2.0 percentage points. These arithmetic results describe the published series only. The slower increments after 2022 cannot establish that localization became more difficult, because expenditure composition and other determinants are not controlled.

The series is especially useful for identifying questions that remain unanswered. If greater local content reflects more domestic technical capability, supplier-level evidence should show corresponding changes in repair, engineering or production responsibilities. If the increase reflects different purchasing categories, the relationship could be weaker. The same aggregate trajectory could arise through multiple pathways. Table 2 therefore distinguishes the observed indicator from the additional evidence needed to interpret economic mechanisms. This prevents the graph from being used as a substitute for a sectoral impact evaluation.

The proposed framework comprises four linked stages: formal access, qualification readiness, operational execution and retained domestic value. Access concerns whether the intended investment and activity can proceed. Readiness concerns whether the enterprise meets customer and operating prerequisites. Execution concerns reliable delivery and financial sustainability. Domestic value concerns capability that remains useful within the Saudi economy. Feedback arises when performance records improve qualification, when local capability reduces deployment dependencies, and when recurring failures cause investors to reconsider expansion.

Three propositions follow. First, greater procedural clarity should improve investment conversion when firms also maintain accurate records and timely internal decisions. Second, localization should create stronger domestic capability when procurement opportunities are paired with verified learning milestones and sufficient demand. Third, integrated workforce, equipment and contract planning should improve operational readiness more than isolated departmental optimization. These

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propositions describe conditional relationships. They are not established causal findings, and competing explanations such as company scale or customer selection must be tested.

Figure 2 locates these relationships without assigning unsupported numerical weights. Regulatory predictability and managerial coordination influence progression, while demand conditions affect whether readiness becomes revenue. The framework allows a firm to be legally established but commercially inactive, or operationally successful without generating advanced local capability. This separation is analytically important: each outcome calls for a different intervention. Simplifying an application will not necessarily solve training gaps, and expanding local procurement will not necessarily improve contract cash flow.

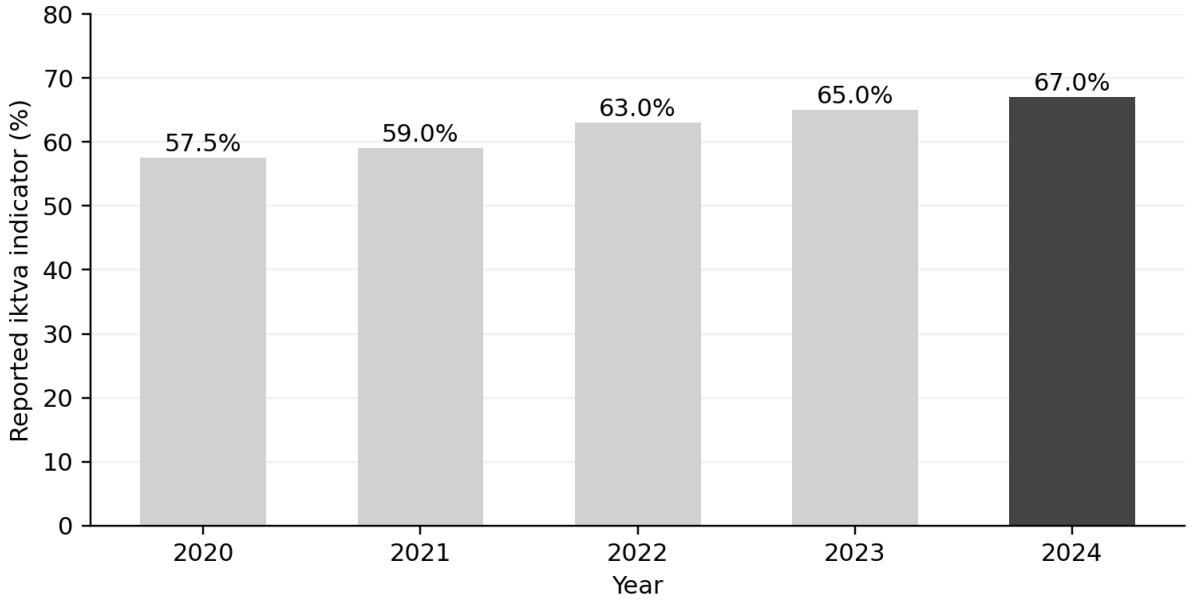



**Figure 1 Reported Aramco iktva indicator for 2020–2024**

**Source: Aramco (2025a), p. 66. Values: 57.5, 59.0, 63.0, 65.0 and 67.0%. Corporate procurement indicator; not a sector-wide FDI series. Author visualization.**

**Table 2 Descriptive results and interpretation limits**

| Measure | Result | Interpretation limit |
|---|---|---|
| 2020 to 2024 change | +9.5 percentage points | Does not identify source of localization gains |
| Relative indicator change | +16.5% (9.5 / 57.5 × 100) | Not growth in investment or domestic value added |
| Annual increments | +1.5, +4.0, +2.0, +2.0 points | Not a controlled comparison of policy impacts |
| Capability evidence needed | Repair, engineering and production responsibility | Requires additional supplier-level records |

**Source: Author calculations from Aramco (2025a); 2022–2024 values corroborated by Aramco (2025b). No causal inference.**

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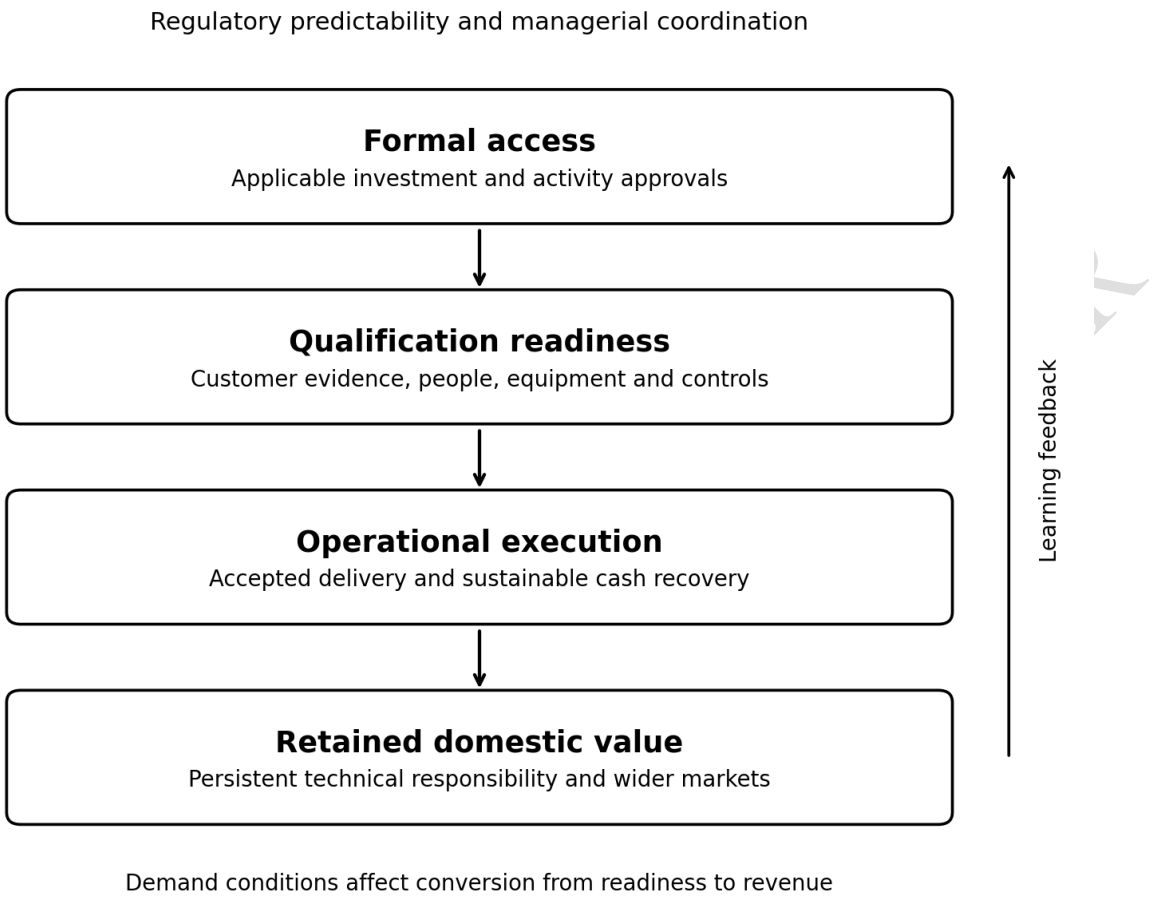



**Figure 2 Proposed investment to operation conversion framework**

**Source: Author conceptual synthesis. Arrows represent proposed relationships, not estimated effects. Demand conditions and learning feedback qualify the progression.**

# 7 Discussion and Practical Implications

The analysis suggests that investment promotion should assess conversion quality alongside entry volumes. Counting registrations indicates administrative activity, but does not show how many enterprises qualify, begin delivery, survive or expand. A complementary reporting system could follow anonymized cohorts through these stages. It should distinguish abandoned projects from delayed projects and identify whether attrition reflects commercial decisions, internal deficiencies or external requirements. This proposal would support diagnosis without assuming that every unsuccessful investor has encountered an unjustified barrier.

Managers should organize investment planning around dependencies rather than department budgets alone. A proposed readiness meeting would bring operations, contracts, HR, procurement, finance and IT together before significant commitments. Its purpose would be to identify prerequisites, unresolved evidence and exposure to demand uncertainty. Table 3 translates this approach into an implementation agenda. The agenda is a proposal for adaptation to individual companies, not a

validated operating standard or a statement that any specific organization currently lacks these controls.

**Table 3 Proposed implementation and evaluation agenda**

| Interface | Proposed action | Evaluation measure |
|---|---|---|
| Corporate records | Assign authoritative records and update owners | Correction rate and unresolved exceptions |
| Qualification | Separate eligibility from revenue commitments | Time to qualification and first accepted delivery |
| Localization | Agree verified technical capability milestones | Retained repair or engineering responsibility |
| Workforce | Link hiring to competence and service demand | Time to authorization and trained staff retention |
| Equipment | Map conformity, deployment and repair dependencies | Document holds and technical unavailability |
| Contracts | Align field records with acceptance and billing | Rejected submissions and unbilled completed work |
| Digital governance | Connect evidence renewal with scope changes | Renewal lead time and scope-change closure |

**Source: Author proposals informed by the review. Measures require company-specific definitions and baseline data; no validated targets or effect sizes are asserted.**

Policymakers and customers could examine whether existing guidance makes interfaces sufficiently clear. Consolidated explanations, version-controlled requirements and transparent escalation routes may reduce repeated interpretation work without weakening safeguards. Evaluation should compare the time and error rates before and after changes, with allowance for application complexity. Reducing formal processing time alone may provide little benefit if firms spend longer resolving ambiguous prerequisites. A user-centered process assessment should therefore include preparation, resubmission and closure, not only the period after an application is accepted.

Capability-oriented procurement could complement this administrative work. Customers can identify areas where domestic repair, calibration or specialist support would offer strategic value and invite suppliers to develop credible pathways. The investor's contribution could include training, authorized procedures and access to technical knowledge. Assessment should ask whether capability remains commercially viable and safe, rather than only whether expenditure occurred locally. Open competition and clear expectations are important because poorly designed support can preserve weak suppliers or discourage more effective entrants.

Foreign investment also requires a balanced treatment of concentration and uncertainty. Specialized suppliers may benefit from a large customer's demand and qualification discipline, while becoming exposed to changes in that customer's priorities. The appropriate managerial response is to evaluate contract-specific assets, alternative uses and phased expansion. The policy response is to examine whether developing supplier capabilities can support broader markets. Neither response assumes that customer size is inherently harmful. The issue is how concentrated demand affects investment reversibility and long-term learning.

The Vision 2030 implication is that diversification can involve building capabilities adjacent to hydrocarbons while reducing dependence on a single revenue base. Maintenance engineering, data services and industrial management can have applications elsewhere, but transferability should be demonstrated. A training program associated with one drilling contract may be valuable without creating an exportable service. Evaluation should identify the knowledge, assets and professional responsibilities that can move between sectors. This makes diversification a measurable capability question rather than a label attached to any petroleum-related expenditure.

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# 8 Research Agenda Limitations and Conclusion

Future research should collect evidence from foreign-invested and domestic service enterprises across comparable activities. Interviews can identify perceived bottlenecks, but should be triangulated with dated process records, contracts and operational indicators where consent permits. Sampling should include unsuccessful entrants and smaller suppliers to reduce survivorship bias. Comparing drilling, maintenance and equipment supply would help determine whether the framework explains common mechanisms or mainly reflects one service category. Findings should preserve commercial confidentiality and avoid unsupported generalization from individual complaints.

A longitudinal design could test the investment-to-operation propositions. Candidate outcomes include time to qualification, time to first revenue, retained technical personnel and repeat contract participation. Explanatory measures could cover record completeness, training readiness, local repair capability and customer concentration. Analyses must address reverse causality: successful firms may invest more in coordination, rather than coordination alone producing success. Regulatory changes also overlap with demand shifts. Credible causal claims would require appropriate comparison groups, sufficient observations and a defensible identification strategy.

The present review has clear limitations. It is purposive, relies on publicly inspectable material and includes company-reported indicators. National econometric findings cannot identify contractor-level effects, and legal statements cannot establish uniform implementation. The small descriptive series is customer-specific and excludes profitability or value-added detail. The framework is therefore a research contribution to be tested, not a validated explanation of all Saudi service-sector investment. No interview findings, cost estimates, barrier rankings or statistical significance levels are asserted.

Foreign participation in Saudi oil and gas services should be understood as a sequence from access to sustained delivery and domestic capability. The evidence supports attention to institutions, supplier qualification and localization, while leaving many enterprise-level mechanisms unresolved. The proposed response is coordinated investment planning, differentiated capability measurement and transparent process evaluation. For Vision 2030, the decisive issue is whether investment creates durable, competitive capabilities that support wider economic activity. Measuring that outcome requires evidence beyond registrations, procurement percentages and announced commitments.

# Declarations

Data availability: The numerical data are publicly reported in the cited Aramco publications. No original participant or company-level dataset was collected. All framework propositions and implementation measures are conceptual.

Ethics: No human participants, interviews or confidential personnel records were used in this review.

Author affiliations, contributions, funding, competing interests and any journal-required disclosure of writing assistance must be completed and verified by the submitting authors.

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