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***Supply Chain Transparency and Supply Chain Risk Management in
Petroleum Exploration (Pvt.) Ltd.***



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To whom it is dedicated.

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Executive Summary

This study explores the critical influence of supply chain transparency and supply chain risk management on the operational efficiency of Petroleum Exploration (Pvt.) Ltd. With the rise of digital interventions, supply chain management has become a real challenge for the company, yet the company still focuses on traditional methods of Supply Chain management. This study employs a quantitative approach, using surveys to gather data from 109 employees across various exploration blocks of Petroleum Exploration (Pvt.) Ltd. The study uses multivariate regression analysis to examine the influence of supply chain transparency and supply chain risk management on operational efficiency, identifying a strong positive correlation between supply chain transparency and operational efficiency and a moderate to positive association between supply chain risk management and operational efficiency. Reliability analysis returned a Cronbach's Alpha of 0.776 across the three constructs, confirming adequate internal consistency and instrument reliability above the accepted threshold of 0.70. Pearson correlation analysis revealed a strong, positive, and statistically significant relationship between supply chain transparency and operational performance ($r = 0.657, p < 0.001$), confirming that greater information visibility across procurement, logistics, and field operations is meaningfully associated with improved efficiency outcomes at PEL. Supply chain risk management demonstrated a moderate positive correlation with operational performance ($r = 0.369, p < 0.001$), indicating a constructive but less pronounced association — a finding consistent with the organization's currently reactive rather than proactive risk posture. A strong inter-predictor correlation between supply chain transparency and supply chain risk management ($r = 0.613, p < 0.001$) further confirmed the mutually reinforcing nature of these two constructs: greater transparency naturally facilitates more effective risk identification and response. Recommendations include implementing real-time sentiment analysis tools, training staff in digital operations, and adopting ERP-integrated supply chain management systems to enhance responsiveness and improve efficiency.

Keywords

Supply Chain Management, Supply Chain Transparency, Supply Chain Risk Management, Petroleum Industry, Oil and Gas Sector

Table of Content

Chapter # 1: Introduction	12
1.1 Introduction.....	12
1.2 Overview of Petroleum Exploration (Pvt.) Ltd.....	13
1.3 Problem of the Project	16
1.2.1 What We Did.....	16
1.3 Project Objectives	17
1.4 Project Rationale/ Justification	17
1.4.1 For Bahria University/ Supply Chain Students.....	17
1.4.2 For the Petroleum Industry	17
1.4.3 For Regulators and Policymakers	17
1.5 Budget and Resources.....	18
1.5.1 Software Resources.....	18
1.5.2 Physical Equipment	19
1.5.3 Human Resources	19
1.6 Chapter Summary	20
Chapter # 2: Relevant Studies and Theories	21
2.1 Introduction.....	21
2.2 Theoretical Framework.....	21
2.3 Review of Literature	21
2.3.1 The Information Silos and The Bullwhip Effect.....	22
2.3.2 Proactive Vs. Reactive Supply Chain Risk Management.....	22
2.3.3 Digital Transformation and the Transparency Frontier.....	23
2.4 Synthesis and Gap Analysis	24
2.5 Conceptual Framework.....	24

2.6 Chapter Summary	25
Chapter # 3: Methods and Techniques	25
3.1 Introduction.....	25
3.2 Research Design: Quantitative Approach	26
3.3 Procedure for Information Gathering.....	26
3.3.1 Population and Sampling	26
3.3.2 Survey Instrument Development	27
3.3.3 Data Collection Execution	27
3.4 Tools Used for Analysis	27
3.5 Analysis of Information, Events, and Materials.....	28
3.6 Project Schedule.....	28
3.8 Chapter Summary	29
Chapter # 4: Project Outcomes and Results”	30
4.1 Chapter Introduction	30
4.2 Research Developments.....	30
4.2.1 Instrument Refinement.....	31
4.3 Execution of Data Collection.....	31
4.4 Data Analysis Results	31
4.4 Reliability Analysis.....	32
4.5 Correlational Analysis.....	32
4.5 Regression Analysis.....	34
4.5 Linking Data Analysis Findings to Identified Problems.....	36
4.5.1 Information Silos and Lack of Transparency	36
4.5.2 Reactive Rather Than Proactive Risk Management	37
4.5.3 Digital Underdevelopment and Organizational Responsiveness	37
4.6 Chapter Summary	38

Chapter # 5: Project Benefits	39
5.1 Chapter Introduction	39
5.2 Project Benefits	39
5.2.1 Benefits for Bahria University/ Supply Chain Students	39
5.2.2 Benefits for the Industry	39
5.2.3 Benefits for Regulators and Policymakers	40
5.3 Chapter Summary	40
Chapter # 6: Limitations and Conclusion	41
6.1 Chapter Introduction	41
6.2 Proposed Recommendations	41
6.2.1 Predictive Analytics for Proactive Risk Management	41
6.2.2 ERP Implementation to Eliminate Information Silos	41
6.2.3 Structured Digital Literacy Training	42
6.2.4 Blockchain-Enabled Supplier Verification and Contract Management	42
6.2.5 Centralized Supply Chain Intelligence Dashboard	42
6.2.6 Dual-Sourcing Strategy for Critical Equipment and Materials	43
6.4 Limitations	43
6.5 Conclusion	44
References	46
Appendix	52

Table of Tables

Table 1 PEL Licenses _____	13
Table 2 PESTLE Analysis of PEL _____	14
Table 3 SWOT Analysis of PEL _____	15
Table 4 Software Resources Utilized in the Project (Zero-to-low-Cost model) _____	18
Table 5 Hardware Resources Utilized in the Project (Zero-to-low-Cost model) _____	19
Table 6 Human Resources Utilized in the Project (Zero-to-low-Cost model) _____	19
Table 7 Project Timeline _____	28
Table 8 Project Timeline (Gantt Chart) _____	28
Table 9 Reliability Analysis through Cronbach's Alpha _____	32
Table 10 Correlation Analysis of Supply Chain Transparency, Supply Chain Risk Management, and Operational Performance _____	33
Table 11 Model Summary and Regression Analysis _____	34
Table 12 ANOVA: Assessment of Overall Model Significance _____	35
Table 13 Regression Coefficients and Collinearity Diagnostics _____	36

Table of Figures

Figure 1 Conceptual Framework: Supply Chain PEL _____ 24