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Foreword

This volume contains the proceedings of the 7th International Conference on Accounting, Business, Economics and Politics (ICABEP 2025), scheduled to take place on 29–30 October 2025 in the Kurdistan Region, Iraq.

The conference is jointly organized by the Faculty of Administrative Sciences and Economics, Tishk International University, Erbil; the College of Administration and Economics, Salahaddin University-Erbil; the Faculty of Economics and Management, University of Szczecin, Poland; Sofia University "St. Kliment Ohridski," Bulgaria; and Yarmouk University, Jordan.

The fundamental aim of the 7th ICABEP 2025 is to bring together eminent researchers, academics, and practitioners to share experiences and research findings in the fields of accounting, business, economics, and politics, while providing a platform for discussion on the latest developments within these disciplines.

Accepted papers will be published in the official ICABEP Conference Proceedings with DOI (Faculty of Administrative Sciences and Economics, Tishk International University, Erbil). Selected full papers will be published in the DOAJ-indexed Eurasian Journal of Management & Social Sciences (EJMSS) or as book chapters with Emerald.

Our mission in organizing the 7th ICABEP 2025 is to foster academic exchange, enhance collaboration among international institutions, and provide a high-quality academic forum for presenting and discussing research.

Finally, we extend our sincere gratitude to all academics, participants, and members of the Honorary Committee, Steering Committee, Organizing Committee, Scientific Committee, and Editorial Committee, as well as the dedicated reviewers and staff of Tishk International University, Salahaddin University-Erbil, University of Szczecin, Sofia University, and Yarmouk University, for their efforts in making this conference possible. We would also like to express our special appreciation to the conference sponsors, without whose support this event could not have been realized.

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Dr. Thomas Burkhardt, is a renowned full professor in Germany. He obtained his degrees in Physics (Diplom 1990) and Economics (Diplom 1992) from the Göttingen University, where he also obtained his doctoral studies summa cum laude in 1994. In 2000, he achieved his Habilitation from the Technical University of Freiberg. Since 2001 he holds the Chair of Finance at Koblenz- University, Germany. He declined an offer for the position of Chair in Banking at Innsbruck University, Austria. His Primary research interests are financial decision making, asset management, derivatives, and long term investment decisions, including forest investments. His preferred methodologies include mathematical modeling and optimization as well as economic experiments. He has also served as Head of Institute of Management, Director of Examination Board, and Erasmus coordinator of international relations. He is also regular reviewer of various Journals and member of scientific committees of various conferences. He has published around 60 research papers in the areas of finance, business administration and informatics, forest economics and physics. He is the co-editor of the book series “Neue Betriebswirtschaftliche Studienbücher“. He is the expert panel member for several accreditation boards including FIBAA, and Kazakh accreditation agencies.

Real Options and Valuation in Natural Resource Industries

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Abstract

While net present value (NPV) methods remain the workhorse of project appraisal, they treat investment as now-or-never and largely ignore managerial flexibility. This research discusses the real-options approach in an accessible, foundational way and shows how to embed key decision options and project risks in valuation. It develops the no-arbitrage logic underlying real-options valuation and contrasts it with the more traditional dynamic-programming perspective. Incorporating real options makes it possible to value the timing option and the options to expand, contract, suspend, or abandon—often yielding higher values than static NPV calculations. The study also highlights the limits of arbitrage-based valuation. Recognizing real options matters for two reasons: First, exercising an option entails opportunity costs that must be properly reflected in investment appraisal. Second, option values generally rise with uncertainty, sharpening our understanding of how risk affects project value—especially in natural resource industries characterized by high volatility. The analysis focuses on the timing of investment and on the choice to continue or suspend operations, emphasizing their critical dependence on uncertainty. For example, greater uncertainty can offset—or even reverse—the typically positive investment incentives of lower interest rates. In markets where production can be temporarily halted when prices fall, real-options models predict hysteresis: firms may optimally shut down even when price covers variable cost, and restart only once prices recover sufficiently. These dynamics are illustrated with selected examples from natural resource industries.

Keywords: Real options, valuation, investment decisions, arbitrage pricing, dynamic programming, natural resource management

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Multi-Criteria Evaluation of Large Language Models in Tax Law: Validating the 'LLM as Judge' Concept

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Abstract

The rapid development of generative Large Language Models (LLMs) has opened new opportunities for automating complex analytical tasks in professional domains, including tax law. However, tax regulations — characterized by their dynamic nature, multi-layered structure, and sensitivity to factual and interpretative errors — expose LLMs to a high risk of misclassification and “hallucinations.” This study addresses the need for a systematic and multidimensional assessment of state-of-the-art LLMs applied to Polish tax rulings. It investigates the validation potential of the “LLM as a Judge” concept. A two-stage experimental design was implemented. In Stage 1, four legal experts evaluated 100 Polish private tax rulings analyzed independently by four advanced LLMs (Gemini 2.5 Pro/Flash, GPT-4o, and DeepSeek R1). The quality of outputs was assessed using a proprietary Legal Quality Index (LQI), which combines legal accuracy, interpretative consistency, and argumentation quality. In Stage 2, the expert-based quality rankings were compared with rankings generated by an autonomous LLM-as-Judge evaluator (OpenAI o3-series model). Agreement between both approaches was quantified using Spearman’s rank correlation coefficient, Rank-Biased Overlap (RBO), and Cohen’s κ coefficient. The results demonstrated heterogeneous LQI scores across models, with Gemini obtaining the highest mean evaluation. Importantly, the LLM-as-Judge demonstrated a very strong correlation with human experts (Spearman’s $\rho = 0.861$, $RBO > 0.9$, $\kappa = 0.88$), confirming the feasibility of reliable automatic assessment. The critique + re-rank procedure further improved consistency and mitigated analytical errors. The findings substantiate the methodological validity of multi-criteria evaluation frameworks for legal AI systems and highlight the potential of autonomous meta-evaluation (LLM-as-Judge) to support expert verification, streamline law-firm workflows, and reduce evaluation costs. Future research will explore hybrid agent architectures and domain-specific reinforcement strategies for explainable AI in legal contexts.

Keywords: LLM models’ alignment, Legal Quality Index, AI validation, interpretability, legal automation

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Dr. Andrea Imperia earned his degree in Economics from the University of Rome "La Sapienza," where he later completed his Ph.D. in Political Economy. His academic background laid the groundwork for a career focused on classical and heterodox economic theories, with particular attention to capital theory, labor markets, and the history of economic thought. In the early stages of his career, Dr. Imperia's research explored the theoretical contributions of economists such as Gustav Cassel and Léon Walras, emphasizing critiques of general equilibrium and neoclassical capital theory. His work brought renewed attention to classical perspectives within modern economic debates. Throughout the 2010s, Dr. Imperia contributed to policy discussions in Italy and beyond, including critical analyses of labor reforms and employment policies. His publications in academic journals such as 'Journal of the History of Economic Thought' and 'Studi Economici' addressed the complexities of labor precarity, wage dynamics, and macroeconomic instability from a Keynesian and Sraffian perspective. Currently serving as an Assistant Professor of Political Economy at the University of Rome "La Sapienza," Dr. Imperia continues to publish scholarly articles and engage in research on economic crises, Latin American economies, and financial instability. His academic efforts are marked by a strong commitment to advancing alternative economic models that prioritize social welfare and theoretical rigor.

Starting from Erbil: Toward a Pilot Project for the Labor Market in Iraqi Kurdistan

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Abstract

Erbil is the most ancient continuously inhabited city in the world. It is a pretty safe city (more than Rome or Paris) and it has a developed tourism sector. It is visited every year by 3-3.5 million tourists (around 70th city in the world ranking of tourism), but only 15-25 percent of them come from abroad. So there is great potential for attracting tourists of the western middle class. Erbil can be easily presented as a safe, tolerant, internationally open crossroads of different cultures. The development of international tourism would increase the hard currencies inflows in an alternative way with respect to the oil and gas revenues, helping the Government of Iraqi Kurdistan in dealing with the uncertainty and instability that can be caused by tensions with the Central Government. The strategy of developing the construction, agricultural, and tourism sectors that is currently underway is very promising. The three sectors are highly labor-intensive, so they can contribute to reducing unemployment. Local workers are already skilled in these sectors. Raw materials and equipment can be found inside the country. In addition, agricultural small companies can be integrated to increase the offer of sustainable tourism. Construction usually activates connected local sectors, boosting employment and the growth rate. Doing research on a pilot project allows us to test if boosting these sectors can increase the working and life conditions in Erbil, and be a model for Iraqi Kurdistan.

Keywords: Employment, Economic Growth, Regional Development

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"Three Zero Theory" of Prof. Muhammad Yunus and its Implications for a sustainable World: A Multi-Study Approach

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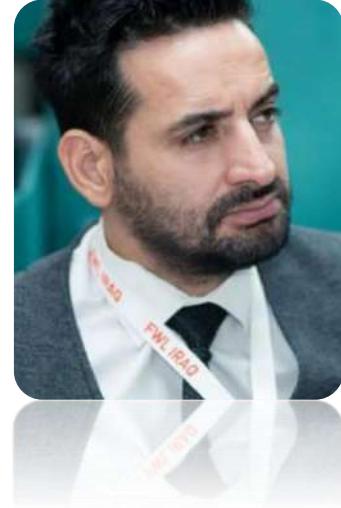
Abstract

This study examines the implications of Dr. Muhammad Yunus's "Three Zero Theory" (3ZERO) — Zero Poverty (ZP), Zero Unemployment (ZU), and Zero Net Carbon Emissions (ZNCE) — in achieving a Sustainable World (SW), focusing on contextual differences between developed and developing countries. Despite progress in addressing global sustainability challenges, the integration of economic, social, and environmental dimensions remains a critical issue. Grounded in Sustainable Development Theory (SDT) and Social Capital Theory (SCT), this study aims to explore the mediating roles of the Social Capital Development (SCD) and the Entrepreneurial Ecosystem (EE), as well as the moderating effect of Government Support and Policies (GSP). Using a multi-group analysis, data from 500 respondents across developed and developing countries were analyzed through structural equation modeling (SEM). The findings reveal significant positive relationships between ZP, ZU, and SW, with SCD and EE mediating these effects in varying contexts. GSP moderated some relationships, exerting stronger impacts in developing countries. However, certain paths, such as ZNCE to SW, showed no significant moderation, highlighting contextual differences in environmental policy impacts. The study's novelty lies in applying Yunus's model across diverse socio-economic environments, providing empirical evidence of its scalability and adaptability. Recommendations include fostering inclusive entrepreneurship, enhancing community-driven social capital, and implementing adaptive policy frameworks to balance economic, social, and environmental goals. These findings contribute to the theoretical discourse on sustainability and offer actionable insights for policymakers and practitioners aiming to bridge gaps in sustainable development across regions.

Keywords: Three Zero Theory, Zero Poverty, Zero Unemployment, Zero Net Carbon Emissions, Sustainability

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Ahmet Demir is an Associate Professor of Operations Management with extensive expertise in strategic planning, quality management, and urban development studies. With a career spanning over two decades in academia and consultancy, he has led numerous research and advisory projects in the fields of real estate development, supply chain resilience, and organizational transformation. His recent work focuses on the intersection of management science and regional urbanization, particularly in the context of high-growth sectors such as gated communities. As a regular speaker at international conferences and a mentor to early-career researchers, Prof. Ahmet is dedicated to bridging the gap between theoretical insights and practical impact, especially in emerging economies such as the Kurdistan Region.

Gated Communities in Kurdistan: Business, Economic, and Social Implications of a Growing Trend

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Abstract

The rapid emergence of gated communities in Kurdistan represents one of the most striking transformations in the region's urban and social landscape. Traditionally, Kurdish society has been built upon open neighborhoods, collective living, and strong community ties. Yet in recent years, gated communities have proliferated, reshaping patterns of residence, consumption, and social interaction. This keynote argues that such a shift is not merely a matter of architectural preference but a multidimensional phenomenon with profound business, economic, and sociological implications. From a business perspective, the gated community model introduces new market dynamics, altering consumer expectations, redefining real estate value chains, and creating competitive pressures for developers, investors, and service providers. Economically, these projects influence land use, pricing mechanisms, and capital flows, generating both opportunities and risks for sustainable urban growth. Sociologically, gated communities signal a departure from traditional cultural practices, producing new forms of social stratification, exclusivity, and lifestyle segmentation that demand critical analysis. By situating Kurdistan's experience within broader global trends while remaining attentive to the region's unique cultural context, this keynote emphasizes the urgent need for systematic research on gated communities. Understanding their impact is essential not only for academics but also for policymakers, urban planners, and business leaders seeking to navigate this growing trend responsibly.

Keywords: Gated Communities, Kurdistan, Social Implications, Growing Trend

Selected titles to be published in other venues

The Effect of Knowledge Sharing on Organizational Commitment, Mediating the Role of Transformational Leadership, Case of Nurses in Hospitals in the Kingdom of Saudi Arabia

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Abstract

This study aims to investigate the impact of knowledge sharing on organizational commitment and examine the mediating role of transformational leadership in this relationship. By exploring how knowledge sharing practices contribute to organizational commitment; the research seeks to provide insights into the complex interplay between these variables. The study hypothesizes that knowledge sharing and transformational leadership will have significant effects on organizational commitment, with transformational leadership acting as a mediator between knowledge sharing and organizational commitment. The researchers proposed that the study variables' coefficients might demonstrate significant correlations between the independent variables (knowledge sharing and transformational leadership) and the dependent variable (organizational commitment), highlighting the importance of these factors in fostering a committed workforce.

Keywords: *Organizational Commitment, Knowledge sharing, transformational leadership, Nurses, Hospitals*

Exploring the Integration of Sustainability Reporting Standards: Challenges and Opportunities

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Abstract

A critical step toward enhancing the quality and comparability of corporate sustainability disclosures is the integration of sustainability reporting standards. Global stakeholders demand greater transparency regarding environmental, social, and governance performance and organizations are faced with a varied range of reporting frameworks, including the Global Reporting Initiative, Sustainability Accounting Standards Board, International Sustainability Standards Board, European Sustainability Reporting Standards, and the Task Force on Climate-related Financial Disclosures. This diversity of standards has led to fragmentation and complexity in non-financial reporting practices, creating significant challenges for both preparers and users of sustainability information. This paper offers a conceptual analysis of the main challenges and opportunities associated with the integration of sustainability reporting standards. Through a comprehensive review of recent academic literature and policy developments, the study explores the technical, institutional, and political barriers to integration, including regulatory inconsistencies, differences in reporting boundaries, overlapping disclosure requirements, stakeholder focus, and regional policy agendas. Additionally, the analysis highlights potential benefits arising from harmonization efforts, including improved data comparability, reduced reporting burdens, enhanced transparency and stakeholder confidence, and the potential for more effective decision-making. The paper further examines current initiatives aimed at standard convergence, such as the work of the International Sustainability Standards Board and European Financial Reporting Advisory Group, and outlines three potential scenarios for the future of sustainability reporting: coexistence, alignment, and full integration. The paper concludes with a set of recommendations for policymakers, standard setters, and reporting entities, highlighting the importance of collaboration among key actors for achieving significant progress in standard integration.

Keywords: Sustainability Reporting, Standard Integration, ESG Disclosure, Regulatory Harmonization, Corporate Transparency

Empirical Evidence of Social CRM Success Factors and SME's Strategic Benefits

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Abstract

The impeccable role social media dominated in business has motivated organizations to refine their distinctive strategic planning. Social CRM is known for its crucial involvement in business process reflecting on the organization's prompt ability and consistency to act and react with stakeholders. Social CRM contributes to the overall organization's competitive advantage enabling data driven decision making and customer centric focus. This research aims to empirically explore the factors impacting a successful adoption of Social CRM (SCRM) amongst SMEs in Erbil. The study examined the role of observability, perceived privacy, interactivity, and social trust in driving successful adoption, delivering significant strategic advantages, and minimizing undesired impacts on customer relations and expectations. The research is grounded with the technology-organization-environment (TOE) framework and further supported by the information systems success (ISS) theory to validate the strategic benefits of SCRM in industrial settings. A quantitative approach was used to test and validate the hypotheses, with Structural Equation Modeling (SEM) applied to analyze and abstract the results. Findings have evidently shown direct significant impact of the constructs on the adoption rate and subsequently led to evident strategic benefits. However, perceived privacy's p-value was statistically at 0.449 which considered insignificant compared to other constructs of the adoption among SMEs in Iraq. Furthermore, magnitude of 0.16 resulted as path coefficient for perceived privacy which is positive, yet small effect. The study is focused on SMEs in Iraq, providing insights into the potential strategic benefits of adopting such technological advancements in SMEs setting.

Keywords: Adoption, Social CRM, strategic benefits, SMEs.

Beyond Homeland Bonds: The Kurdish Community in the UK

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Abstract

In the past, the Kurdish diaspora played a significant role in promoting the Kurdish struggle. It was anticipated that the Kurdistan Region would embrace the Kurdish diaspora more as it advanced. As a result, the Kurds living abroad ought to have been more vocal in supporting the Region and its administration. What has been occurring, nevertheless, is not as such. The Kurdish diaspora is becoming decreasingly supportive of the Kurdistan Region as time goes on. In addition to attempting to offer workable measures to help the Kurdistan Regional Government (KRG) catch up with the Kurdish diaspora before it is too late, this article aims to shed light on the reasons of this phenomenon. Participant observation and interview were utilized as methods of data collection, where primary data were collected. Additionally, secondary data were obtained through document analysis, and the data were thematically analysed through relevant themes. Does the Kurdish diaspora no longer support the Kurdistan Region? It is one of the study topics this initiative aims to answer. If it is, why? Researchers and students studying the Kurdish diaspora and Kurdish studies are among the first beneficiaries of this study.

Keywords: KRG; Kurdish Advocacy; Kurdish Refugees in the UK; Kurdish Diaspora.

The Role of the Sino-Russian Strategic Partnership in the Transformation of the International System

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Abstract

This research examines the strategic alliance between the Russian Federation and the People's Republic of China in the post-Cold War era and the role of this partnership in transforming the international system. The study is premised on the proposition that the Sino-Russian strategic alliance constitutes a pivotal factor in generating fundamental changes in the global balance of power and facilitating the transition of the international system from the United States of America (US)-led unipolarity to a multipolar configuration. The central research question addresses whether the strategic alliance between China and Russia can serve as an effective alternative to American hegemony and how this partnership influences the reshaping of the emerging global order. The primary hypothesis posits that the deepening of strategic cooperation between both states across political, economic, and military domains results in the formation of a new power pole capable of altering the equilibrium of the international system. The research methodology employs a descriptive-analytical approach to examine bilateral relations and their regional and international implications. Furthermore, the study identifies four principal phases in the evolution of this alliance: from the normalization of relations to the achievement of comprehensive strategic partnership. The findings reveal that cooperation between both states within the framework of international organizations such as the Shanghai Cooperation Organization and the BRICS group, alongside coordination within the UN Security Council and the establishment of alternative financial systems, has collectively created an effective mechanism for countering Western hegemony and constructing a new global order founded upon the principles of multipolarity and balance of power.

Keywords: Sino-Russian, Strategic Alliance, Multipolarity, SCO and BRICS

The Impact of Post-1980 Military Coup Legislation Restricting Kurdish Rights in Turkey

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Abstract

The 1980 military coup in Turkey reshaped the country's political and legal framework, introducing a new constitution and laws that significantly curtailed civil liberties. Although some measures were taken in laws to maintain stability and security, these legal frameworks were disproportionately implemented against Kurdish population. This study focuses on post-1980 constitution and related provisions, party laws, anti-terrorism laws and emergency regulations which impacted Kurdish political, cultural, and social rights. Through qualitative document analysis, the research leans upon constitutional texts, laws, human rights reports, and academic works and assesses both legal structures and their implementation. Findings indicate how Kurdish political, cultural and social rights were violated and Kurdish political parties were closed. It also shows broad definitions of terrorism and prolonged state of emergency and their effects on Kurdish community. These measures ended up with suppressed Kurdish identity and systematic human rights violations. These policies both cause social trauma and reluctance of Kurdish population to participate in democratic processes. All these also caused high tensions between the Turkish State and Kurdish People. The study underscores the necessity of a rights-based and inclusive framework that balances national security with fundamental rights to ensure democratization and long-term stability.

Keywords: Kurds in Turkey, military coup, constitution, anti-terrorism law, democratization

The Synergistic Convergence of Business Analytics and Decision Science: An Integrated Conceptual Framework for Organizational Value Creation

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Abstract

Business intelligence is becoming increasingly popular among corporations to lower costs, improve service quality, and improve decision-making processes. While business intelligence has existed for years, it has challenges reaching what researchers in the area regard as its maximum potential. Thus, this study aims to review the conceptual foundation of the convergence of business analytics and decision science in facilitating informed business decision-making. The contemporary business environment is complex and evolving, and the unpredictable demand for products obliges powerful analytics tools. Hence, data gathering is required to enable organizations to meet their target audience requirements by delivering superior customer value at a profit. Decision science combines human judgment and analytical tools to tailor campaigns and offerings for goods based on buyer habits and psychological factors. It uses cutting-edge technologies like machine learning, predictive analytics, and big data to make data-driven business decisions that are more accurate, efficient, and timely. Consequently, this study intends to review the current trend and assess the benefit of the convergence of business analytics and decision science in venture decision-making. Additionally, it delves into the intricacies and benefits of adopting decision science during these processes. This study utilizes past studies to collect data from diverse academic journals. The findings suggest that business analytics and decision science impact company decision-making in a way that has not been witnessed previously from enormous data sources. Also, the convergence of business analytics and decision science smoothens and upgrades forecasting and market trends in business decision-making in the long run, as they are linked to enhancing the efficiency and sustainable organizational value creation.

Keywords: *Business Analytics, Business Intelligence, Data Analytics, Decision Science, Organizational Value Creation*

Beyond Convenience: Institutional Trust as the Primary Determinant of Digital Finance Adoption in a Fragile State

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Abstract

This paper investigates the determinants of resistance to digital financial services in a fragile state, using evidence from Kurdistan Region-Iraq mandatory public sector payroll digitization. While digital finance is critical for economic development, its adoption in post-conflict environments with low institutional trust remains poorly understood. We used survey data from 2,144 public sector employees and employed logistic regression models to analyze the factors influencing digital banking adoption. The study found that trust in banking institutions was the single most powerful predictor, increasing the odds of adoption more than threefold. Counter intuitively, higher education and income levels were associated with lower digital engagement, suggesting that perceived risks may outweigh convenience for these groups. Furthermore, the analysis revealed that digital literacy moderates the relationship between trust and adoption, with trust being significantly more important for less experienced users. This paper contributes to the literature by providing a nuanced behavioural model of financial technology adoption in a low-trust environment, demonstrating that non-financial factors, particularly institutional trust, are paramount and that their effects are complex and non-linear.

Keywords: Financial inclusion; fintech adoption; institutional trust; fragile states; behavioral finance; cash dependency.

Strategic Partners or Disposable Allies? The Role of Iraqi and Syrian Kurds in U.S. Foreign Policy Since 1991

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Abstract

This study investigates the evolving role of Iraqi and Syrian Kurds in U.S. foreign policy since 1991, emphasizing their strategic utility within the broader Middle Eastern regional security complex. Drawing on Barry Buzan's Regional Security Complex Theory, the research analyzes how the Kurds have functioned as both partners and instruments in advancing U.S. objectives, particularly in the Gulf War, the 2003 Iraq invasion, and the campaign against ISIS. Despite their tactical value, Kurdish groups have experienced inconsistent support, reflecting the United States' fluctuating priorities and its balancing act among regional powers such as Turkey, Iraq, and Iran. Utilizing qualitative methods, including case studies and thematic analysis of interviews and official documents, the study reveals the complexities and contradictions in U.S.-Kurdish relations. It contributes to a deeper understanding of non-state actors in international politics and offers insights into the geopolitical dynamics shaping American engagement in the Middle East.

Keywords: Kurds, U.S Foreign Policy, Middle East, Iraq, Syria, International Security

Assessing the Effect of Cloud Computing on Information Systems Efficacy in MTN Library, Abu Zaria

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Abstract

The study examines the influence of cloud computing on ABU MTN Library's information systems success. A quantitative methodology was applied, beginning with a structured questionnaire for librarians, staff, and frequent library users. Descriptive and inferential statistical techniques were applied to identify how these variables correlate with and impact system adoption outcomes. The results indicate that cloud computing has a statistically significant positive effect on information system efficacy, operational performance, and user satisfaction metrics. Regression analysis indicated that risk reduction perception was the strongest predictor of information system efficacy, followed closely by perceived benefits and change. The study concludes that positive stakeholder attitudes on these dimensions synergistically drive the effective adoption of cloud-based information systems in university libraries. The study recommends the need for clear strategic articulation of cloud value propositions, open acknowledgment of challenges, investment in training and capacity development, and the establishment of robust governance structures (including SLAs, data policies, and contingency plans). Finally, suggestions for further research include the application of longitudinal (such as comparative studies across various library settings) or mixed-method research designs.

Keywords: *Cloud Computing, Information Systems, Information Management, IT*

Exploratory Analysis of Workforce and Sharia-Compliant Finance Trends in Iraq's Islamic Banking Sector (2020–2024)

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Abstract

This study presents an exploratory analysis of Iraq's Islamic banking sector through the dual lens of human capital trends and Shari‘ah-compliant financial practices. Drawing on the foundational concepts of Islamic economics—such as Mudārabah, Mushārakah, non-interest-based financing, and inclusive wealth circulation—the paper investigates workforce-linked and finance-linked Structural Islamic Financial Indicators (SIFIs) from 2020Q3 to 2024Q3. Specifically, it analyses five HR-relevant variables (number of employees, branch offices, ATMs, fee-based revenue, and profit-sharing investment accounts) alongside key Shari‘ah-compliant financial metrics (total Shari‘ah-compliant financing, sukūk holdings, and Shari‘ah-compliant securities). Using quarterly data, the methodology combines descriptive trend analysis, year-over-year growth rates, and institutional productivity ratios. The findings indicate a growing diversification in Shari‘ah-compliant funding instruments, particularly in profit-sharing accounts and ethical securities, despite stagnation in sukūk issuance. By aligning the observed financial and workforce shifts with Sustainable Development Goals, especially SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 10 (Reduced Inequality), the study positions Iraq's Islamic banking sector as both a driver of inclusive employment and a model for ethical finance in a post-crisis economy. The paper concludes with policy recommendations to strengthen Shari‘ah governance, foster digital HR capacity, and enhance innovation in Islamic financial instruments.

Keywords: Islamic Economics, Islamic Banking, Shari‘ah-Compliant Finance, SIFI Indicators, Employability, Digital Transformation, Human Capital

Exploring Student Perceptions and Use of Generative AI Tools: Insights from a University Survey (Iraqi Case)

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Abstract

This study investigates how university students perceive and use generative artificial intelligence (GenAI) tools, focusing on the most common application like ChatGPT. The study runs a systematic survey to explore undergraduate students' general awareness, use, and attitudes towards GenAI in academic settings. 250 Tishk International University students from different departments in Erbil, Kurdistan Region of Iraq (KRG), participated in the survey. Data were analyzed using IBM SPSS Statistics version 25. Descriptive statistics, mean values, and standard deviations were used to summarize major findings about perceived usefulness, ease of use, use frequency, and concerns with ethical risks. Initial findings show that most students are familiar with GenAI tools and use them to get help with academic writing, idea generation, and explanation of difficult problems. The students overall reported positive attitudes towards the convenience and utility of GenAI tools. This paper focuses on descriptive outcomes. The findings of this study offer pragmatic value for educational institutions and policymakers who are interested in facilitating optimal use of GenAI in higher education. Knowing how students utilize such tools allows educational institutions to offer proactive steps in articulating clear usage guidelines, digital literacy and ethics sensitization courses that enable learners to be capable of using new technologies without undermining academic integrity.

Keywords: Generative AI, ChatGPT, SPSS, Student Perception, Higher Education, Academic Integrity, Digital Tools, Exploratory Study, Technology in Education

Comparing Virtual Leadership Tendencies across Cultures and Technological Contexts

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Abstract

The rise of virtual teams due to globalization and technological progress has transformed leadership, requiring culturally and digitally adaptive strategies. This study examines how cultural orientations and technological contexts affect virtual leadership, focusing on decision-making, trust-building, and team performance. A systematic review of peer-reviewed literature (2000–2024) highlights that leadership effectiveness varies across cultural dimensions—individualistic cultures prefer autonomous leadership, while collectivist cultures value relational approaches. Technology enhances collaboration but may lead to digital fatigue if mismanaged. Trust-building depends on balancing cognitive and affective trust, shaped by cultural context. The study identifies transformational and authentic leadership as most effective and recommends culturally responsive leadership, digital literacy training, and transparent communication to optimize virtual team success in diverse environments.

Keywords: Virtual leadership, cultural orientations, technological contexts, decision-making, trust-building, systematic literature review.

From Diverse Leadership to Engaged Employees: Understanding the Mediating Influence of Learning Capacity and Knowledge Sharing

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Abstract

The study investigates the effectiveness of diversity-oriented leadership on employee job engagement among public and private companies in the Kurdistan Region of Iraq. Secondly, employee individual learning capacity and knowledge-sharing behaviors have been investigated as mediating variables in the model. Data have been collected from 192 respondents from various companies and evaluated through structural equation modeling. It has been observed that diversity orientation in companies significantly improves employee engagement. Besides, individual learning capacity and knowledge sharing significantly improved this relationship. Additionally, the effects of DOL have shown significant differences between public and private companies. Therefore, organizations, especially public offices, recommended applying diversity-oriented strategies to improve employee knowledge sharing and engagement.

Keywords: Diversity Oriented Leadership, Individual Learning Capacity, Knowledge Sharing, Job Engagement, Public and Private Sector, Moderation

Analyzing Trump's Tariff Strategy: Domestic and Global Consequences (2017-2021 and 2025)

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Abstract

The Trump administration's implementation of America First trade policies from first 2017-2020 and the second term of Trump return 2025 significantly reshaped the global trade dynamics by prioritizing protectionism and unilateralism over multilateral agreements. This marked a major departure from decades of multilateral trade liberalization, fundamentally altering global trade dynamic through an aggressive tariff strategy. This paper examines the impact of Trump's tariff policies on international trade patterns. Through analysis of trade data, economic indicators and policy outcomes. The findings reveal that while Trump's tariffs succeeded in achieving some short-term protectionist objectives, many industries faced substantial input cost and retaliatory losses. Moreover, the findings highlight the emergence of a (zero-sum nationalism) in U.S trade policy clashing with the liberal institutional norms. Overall, the America first doctrine has negative implications for both domestic and global consequences.

Keywords: *Trade, International economy, tariffs, protectionism.*

Full Papers

Iran's Geopolitical Codes Amid the Weakening of the Axis of Resistance

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Abstract

This study investigates the transformation of Iran's geopolitical codes following the weakening of the Axis of Resistance, particularly after the collapse of the Assad regime. Drawing on Colin Flint's framework of geopolitical codes and employing qualitative content analysis, this study examines how the collapse of the Syrian regime, the maximum pressure policies of the new Trump administration, and the 12-day war between Israel and Iran have reshaped Iran's geopolitical codes. The findings reveal that Iran's traditional reliance on proxy networks and asymmetric strategies has faced significant setbacks, prompting a recalibration of its regional stance. The study contributes to understanding the interplay between external pressures and internal strategic adaptation, offering insights into the future trajectory of Iran's geopolitical codes and regional stability.

Keywords: Iran, geopolitical codes, Axis of Resistance, Syria, maximum pressure, proxy warfare

1. Introduction

“We should combat and contain the threat in the eastern Mediterranean to prevent bloodshed on Iranian territory.” Major Mujtaba Pashaei, Green Path, late 1950s

Iran has a long-standing history of cultivating political and religious ties across the Middle East, shaping its enduring influence with key regional actors. Its involvement in Lebanon dates back to the establishment of the Safavid Empire. To address the absence of a established Shia jurisprudential (Fiqh) tradition in Iran, Shah Ismail invited Shia scholars from Jabal Amel in Lebanon, as well as from Bahrain and al-Ahsa in Eastern Arabia, to relocate to Iran (Edu, 2024 and Reisinezhad, 2019). Subsequently, they became influential figures in Iranian

politics, particularly during the rule of Shah Tahmasb, who succeeded Shah Ismail. Influential people like Sheikh Mohaqeq Karaki, and his successors Allameh Mohammad-Baqer Majlesi and Sheikh Bahai served as leading jurists for the Safavid Shahs in confronting the Sunni clergy supported by the Ottomans in competing for regional hegemony (Reisinezhad, 2019). While the Shia religious establishment had historically contributed to the growth of Shiism in Iran, subsequent Iranian rulers after the Safavid era struggled to maintain the same level of connection with the Lebanese Shia community. The Zand and Qajar dynasties lacked the political and military strength to safeguard Iran's territorial integrity or project influence into the eastern Mediterranean (Ibid, 2019).

The second phase of Iran's Middle East policy, particularly regarding Iraq, Lebanon, and their Shia populations, began under Shah Mohammad Reza Pahlavi. His approach aimed to counter the Pan-Arab ambitions of Egyptian President Gamal Abdel Nasser and respond to the overthrow of Iraq's monarchy by nationalist officers (Reisinezhad, 2019). Consequently, he focused on the Lebanese Shia community as a key pillar of Iran's non-state foreign policy strategy, even collaborating with Lebanese Maronites in efforts opposing Egypt. The Shah assigned the Bureau for Intelligence and Security of the State (SAVAK), rather than the Foreign Ministry, with carrying out this policy because of its sensitive nature and SAVAK's stronger capacity to manage external threats and subversive activities (Shapira, 2020, and Reisinezhad, 2019). This phase spanned from the mid-1950s to the 1967 June War, which significantly weakened the appeal of Nasserism and led to a decline in the Shah's perception of Nasser as a strategic threat.

During this phase, SAVAK supplied small arms and ammunition to President Chamoun and his allies to counter groups aligned with Nasserism and Arab nationalism. In addition to military aid, Iran provided financial support to Shia educational institutions and allocated \$330,000 to back anti-Nasserist candidates in the elections (Samii, 1997). In addition to their involvement in Lebanon, Iranian agents acting through SAVAK held regular meetings with Iraqi politicians who opposed the government established after the 1958 revolution (Reisinezhad, 2019).

Another phase of Iran's involvement in Lebanon started from 1967 to 1978 where Iran grew increasingly worried about Palestinian military groups in Lebanon training Iranian dissidents. This happened particularly after the Palestine Liberation Organization (PLO) relocated to southern Lebanon following their expulsion from Jordan in 1970. In spring 1978, Iran as a part of the United Nations Interim Force in Lebanon (UNIFIL) sent SAVAK agents to target Sayyid Musa's followers. It backed a Christian-Shia militia allied with Israeli-supported Maronites and worked with Chamoun and the Khalils. That August, Musa Sadr criticized the Shah in *Le Monde* (Milani, 2025). This situation continued until the revolutionaries came to power in 1979. The post-revolution government pursued a forward defense strategy in its regional policies. This approach expanded Iran's influence, aiming to level the strategic playing field, reduce regional disparities, and establish deterrence by extending the theater of conflict with the US beyond Iran's borders (Milani, 2025).

Since the 1979 revolution, the cornerstone of Iran's foreign policy has been supporting non-state actors, the implementation of asymmetric strategies, and direct and indirect engagement with regional powers (Leandro, Branco and Caba-Maria, 2021). Iran's foreign policy is shaped by two complementary doctrines: the "chain (or line) of defense" and the perception of itself as the leaders of the global Muslim community (Kozhanov, 2018). The chain of defense includes proxies in Lebanon, Iraq, Syria, and Yemen, collectively referred to as the "Axis of Resistance." The projection of Iran's power began in Lebanon in 1982 and subsequently expanded to Iraq, Syria, and Yemen. The expansion of Iran's sphere of influence was increased due to the power vacuum that emerged in the aftermath of the Arab Spring. According to Bayat and Shafi (2024), Iran has recently, provided proxies like Hezbollah and the Houthis with drones to be deployed against targets in Israel, Saudi Arabia, and the UAE.

This strategic expansion laid the groundwork for Iran's deeper involvement in subsequent regional conflicts. Iran's intervention in Middle East intensified as the territory regained from Islamic State of Iraq and Syria (ISIS) presented a new challenge on the control of the area. It was an opportunity for Iran to expand its

influence through the belt from Tehran through Baghdad and Damascus all the way to Beirut (Kissinger, 2018). It enabled Iran to more freely and effectively extend support to Axis of Resistance groups across multiple countries.

1.1 The central role of the Axis of Resistance

The Axis of Resistance plays a fundamental role in Iran's "forward defense" strategy, a core component of its foreign policy doctrine. This strategy serves not only a defensive purpose but also enables Iran to project power and confront its adversaries indirectly, thereby avoiding direct military engagement. The actions of Axis of Resistance groups compelled Israel to manage multiple smaller-scale confrontations while simultaneously maintaining its primary military campaign in Gaza (Bulos, 2024). This further complicated Israel's security environment and strategic focus. The central role of the axis has become increasingly significant, as these groups have evolved beyond the status of mere non-state actors. They have been deeply embedded within formal state institutions and possess substantial autonomous influence (Mansour et al., 2025). This deep involvement in state institutions provide the leverage on domestic and translational level. These factors have motivated Iran to heavily invest in axis groups across different countries for more than four decades.

Nevertheless, recent developments in the Middle East—most notably the fall of the Assad regime in late 2024—have significantly transformed the region, which continues to serve as a focal point of intense geopolitical rivalry (Palani, 2025). As a result of this transformation, Iran's foreign policy orientation (geopolitical codes) is at a pivotal moment. As an assertive middle power with significant ambitions to project regional influence, Iran attempts to advance its revisionist agenda in the region (Akbarzadeh and Naeni, 2025). Recently, due to its engagement in both regional and international affairs, Iran's geopolitical codes have become contentious. Iran's geopolitical codes—from indirect involvement in the Russo-Ukrainian war to regional interventions—have caused repercussions for its foreign policy. As Massoud Nya et al. (2018) highlight, Iran's involvement in the Syrian war intensified ethnic and sectarian tensions across the region. It also deepened

Iran's strategic differences with key regional actors such as Turkey and Saudi Arabia. These tensions became so severe that even minor incidents in Iran's relations with these countries—particularly with Saudi Arabia and Turkey—can quickly escalate into diplomatic crises. This has caused increased international pressure on Iran, especially regarding the issue of nuclear weapons.

Iran's intervention and support for the Axis of Resistance groups, in conjunction with Hamas's attacks on Israel, marked a pivotal shift in Tehran's geopolitical codes. The network that Iran funded and supported for decades has experienced unexpected consequences due to the elimination of key figures and weakening of their structure (Mahmoudian, 2025). With the fall of Bashar al-Assad's regime in Syria, Tehran lost a major pillar of the Axis of Resistance, as well as a crucial allied ruling family in Damascus (Motamedi, 2024).

1.2 Problem Statement

The central issue to be examined in this research is how evolving geopolitical dynamics in the Middle East, particularly the weakening of the Axis of Resistance are reshaping Iran's geopolitical codes. For over four decades, one of the main cornerstones of Iran's geopolitical codes anchored in its unwavering support of the Axis of Resistance. However, new developments including the weakening of the Axis of Resistance, , the maximum pressure policies of the new Trump administration and the escalation of 12-day war between Israel and Iran have exposed contradictions between Iran's ideological commitments for supporting the Axis of Resistance forces and its pragmatic recalibrations of geopolitical codes. Despite the emphasis of the Iranian leaders on the strength of the Axis of Resistance, its operational effectiveness has declined significantly, and Iran's projected role within the region appears to be diminishing.

1.3 Purpose Statement

The central aim of the study is to explore how Iran recalculates its geopolitical codes in response to the weakening of the Axis of Resistance. The study focuses on how these developments undermined the Axis of Resistance capacity and forced Tehran

to recalibrate its geopolitical codes. To achieve this aim, particular attention is given to Syria's role as the logistical heart of the resistance network, the impact of U.S. maximum pressure, and 12-day war between Israel and Iran. Together, these factors are analyzed as key drivers behind the recalibration of Iran's geopolitical codes.

1.4 Research Question

In what ways have the collapse of the Syrian regime, the maximum pressure policies of the U.S., and the 12-Day War influenced Iran's geopolitical codes?

This study argues that Iran's geopolitical codes, once centered on supporting and equipping the Axis of Resistance, have become increasingly constrained. The collapse of Syria as a strategic bridge, the intensification of U.S. maximum pressure policy, and the direct military confrontation with Israel have collectively diminished Iran's capability for supporting the Axis of Resistance. As a result, Iran has limited militia activity in Iraq, faced growing governmental pressure on Hezbollah in Lebanon, and observed a decline in Houthi operations in the Bab al-Mandab Strait. These developments signal a broader strategic reorientation in Iran's geopolitical codes.

1.5 Significance of the Study

This research has both practical policy relevance and theoretical academic value that offers insights with implications for regional stability and geopolitical analysis. Practically, understanding the geopolitical codes of Iran is crucial for assessing the potential for conflict and stability in the region. It will help identify potential conflict and policy formulation accordingly to prevent more escalation in the Middle East region. Academically, the research will address scholarly understanding of how state actors adapt their geopolitical codes under different situations. It will highlight the strategic role of non-state actors in the designing of Iran's geopolitical codes.

2. Literature Review

According to Flint (2022) geopolitical codes refers to a country's orientation towards the world, defining its allies and enemies as well as the ways that maintain allies and confront enemies. Since the 1979 revolution, Iran's geopolitical codes in the Middle East revolved around the support of the Axis of Resistance. However, recent developments in the region have restrained Iran's geopolitical codes as a response to the weakening of the axis as well as the collapse of the Syrian regime, U.S maximum pressure policies, and the 12-Days war with Israel. The current scholarship focuses on Iran's presence in the region, particularly its presence in Syria as a bridge for supporting proxies in the region.

Proxies played an effective role for Iran to advance its foreign and security policy. This effective role happened through the reducing of direct military engagement, financial and human costs (Azizi and Vazirian, 2022). For the first time Iran used Syria in 1983 to send a division of the Islamic Revolutionary Guard Corps (IRGC) to Lebanon, laying the foundation of Hezbollah. Syria facilitated the transfer of weapons, resources, trainers, and troops from Iran to Lebanon to ensure the access of the most potent actor of the Axis of Resistance to the resources (Mahmoudian, 2025 and Budiman, 2024).

Concerning Iran's presence in Syria, Carl (2025) mentions that a military coalition of Axis of Resistance groups was formed by Major General Qassem Soleimani to combat the Syrian opposition and the ISIS. Soleimani led this coalition during the most brutal phases of the war and would go on to supervise the unparalleled entrenchment of Iranian and Iranian-backed forces in Syria. The IRGC were able to smuggle weaponry into Lebanon and the West Bank via Jordan and operate freely throughout much of the nation thanks to this military presence, which persisted until Assad's overthrow. In addition, to enhance its strike capacity and defence against Israel, IRGC moved close to the Israeli-controlled Golan Heights and set up air defence stations in that area (Shapira, 2024).

Regarding the support of proxies and Iran's presence in Syria, Fathi et.al (2019) argue that Syria became the strategic heart of the Axis of Resistance. Direct and

indirect foreign intervention divided the engaged sides into two opposing groups. Additionally, Cohen and Shamci (2022) state that Syria was that last fortress of Iran in matters of managing its proxies and allies for building a functional territorial corridor between Iran and Lebanon via Iraq and Syria. Syria was a gateway for Iran to reach the Arab world, a barrier against America and Israel, and the most significant one as a bridge to access Lebanon's Hezbollah (Ibid 2019 and Kozhanov, 2018). It was important for Iran to prevent the weakening of the Axis of Resistance and at the same time maintaining Syria as a security defense shield in the region. Additionally, by supporting the Axis, Iran pursued goals including preventing Israel's expansion in the region, maintaining the Shia coalition, and preserving the region's geopolitical balance (Sadeghi et al., 2015).

On the importance of Syria to Iran, Wastnidge (2024) stated that Syria is vital for Iran's security, survival, the Axis of Resistance, and its alliance network. Since 2011, Iran invested in Syrian energy and resources tremendously to expand its influence and presence in that country (Carl, 2024). Regarding the loss of Syria, Dr. Abbas Khameyar (2025) former cultural consultant of the Islamic Republic of Iran in Lebanon in an interview mentioned that we suffered several strategic blows; including what happened in Lebanon and Syria. In Syria, one of the basic axes of the resistance was lost; This axis was a key communication bridge for the resistance front in Lebanon and Palestine (KHAMENEI.IR, 2025). This highlights that Syria had strategic importance for Iran since the country was in the axis of Islamic resistance. Iran had the fear that the change of political regime in Syria will break the axis. The collapse of Syrian regime as a strategic ally cost on the Axis of Resistance. The effectiveness of the resistance axis is exacerbated by significant logistical and strategic challenges facing axis without this land link (Mahmoudian, 2025).

While existing research has extensively examined Iran's military entrenchment in Syria and its role in sustaining the Axis of Resistance, few studies have systematically applied the framework of geopolitical codes to interpret Iran's strategic recalibration in response to the weakening of the Axis of Resistance especially the collapse of the Syrian regime, the U.S maximum pressure policies,

and 12-Day war between Israel and Iran. This study addresses this conceptual gap by analyzing how Iran's evolving threat perceptions, alliance structures, and regional policies reflect a transformation in its geopolitical coding.

3. Research Methods

In terms of methodology, the authors have proficiency in the region's key languages—Arabic, Farsi, Kurdish—as well as English, which facilitated access to a wide range of sources on recent geopolitical developments. Being based in the region has also allowed the researchers to directly observe these developments and their unfolding dynamics on the ground, providing additional contextual insights. To study Iran's geopolitical codes amid the weakening of the Axis of Resistance, this research adopts a qualitative content analysis method to explore the multifaceted impact of three major developments: the collapse of the Syrian regime, an the maximum pressure policies of the US, and the 12-day war between Israel and Iran. These factors have significantly influenced Iran's regional posture and geopolitical codes calculations, necessitating a comprehensive analytical approach.

According to Bryman and Bell (2019), content analysis entails a systematic examination of a wide range of documents and texts, which may be printed, visual, aural, or virtual in nature. This method allows researchers to identify patterns, themes, and underlying meanings embedded within the materials. In its qualitative form, content analysis goes beyond surface-level interpretation to uncover deeper ideological, rhetorical, and strategic dimensions that shape geopolitical behavior.

To explain Iran's geopolitical codes in the aftermath of the weakening of the Axis of Resistance, this study will conduct a focused analysis of official announcements and communications issued by both Iran and the United States. Particular attention will be given to speeches delivered by Iran's Supreme Leader Ali Khamenei, which often articulate Iran's strategic worldview, and to formal statements and policy outlines published on the official website of the U.S. government, reflecting American intentions and regional priorities. In addition, the research incorporates

academic papers, peer-reviewed publications, and relevant media content to triangulate perspectives and enrich the analytical depth.

4. Theoretical Framework

To study Iran's geopolitical codes, this section first clarifies the concepts of foreign policy, doctrine, and geopolitical codes, and then explains their interrelationship. This conceptual foundation is essential for understanding how Iran's geopolitical codes are shaped and recalibrated in response to regional developments.

4.1 Foreign Policy and Doctrine

According to Hudson and Day (2020) foreign policy is the approach adopted by the national government to achieve its goals in its relations with external entities. Furthermore, foreign policy is a set of actions or rules governing the actions of an independent political authority deployed in the international environment. Hence, foreign policy is related to how states work to achieve their objectives in their relations with other countries. Closely related to foreign policy is the concept of doctrine that is “a set of beliefs, rules and principles guiding foreign policy.” A doctrine often is summed up in a statement or a formal document to communicate a government’s priority (Morin and Paquin 2018, p.p. 3-21).

Based on these definitions, foreign policy refers to the practical actions of states in their external relations, while doctrines serve as normative frameworks that articulate the values and principles legitimizing those actions.

4.2 Geopolitical Codes: Definition and Structure

To analyze Iran's geopolitical codes, this research uses the definition of geopolitical codes by Colin Flint. According to Flint (2022, p. 50), geopolitical codes are “the manner in which a country orientates itself towards the world.” Each country in the world defines its geopolitical code, consisting of five main calculations:

- Who are our current and potential allies?
- Who are our current and potential enemies?
- How can we maintain our allies and nurture potential allies?

- How can we counter our current enemies and emerging threats?
- How do we justify the four calculations above to our public, and to the global community?

In other worlds geopolitical codes are practical reasoning behind the foreign policy of an actor. Geopolitical codes are operational codes made up of a collection of political geography presumptions that guide how a nation's connections with other nations evolve. A definition of a state's interests, a list of external threats to those interests, a planned response to those threats, and a rationale for that response must all be included in such a code.

The number of geopolitical codes will equal the number of states (Flint and Taylor, 2018).

States' geopolitical codes work on three levels including local, regional and global. The local level is related to the neighboring states and all states whether small or big should have these geopolitical codes. Those states that aspire to project their geopolitical codes beyond their immediate neighbors have regional level geopolitical codes. Only a few states have global geopolitical codes that operate on the global level (Ibid, 2018).

Geopolitical codes, as a concept, have been widely discussed in the fields of international relations and political geography to explain how states conceptualize and operationalize their foreign policy objectives (Flint, 2022; Flint & Taylor, 2018). Scholars argue that a state's geopolitical code reflects both its material capabilities and ideational frameworks, combining strategic interests with historical, cultural, and ideological influence. By formalizing these assumptions, geopolitical codes offer a lens to analyze consistency and variation in a state's international behavior across time and space. This approach is particularly useful in understanding states like Iran, whose foreign policy is shaped not only by pragmatic security concerns but also by ideological commitments and transnational normative agendas.

4.3 The Iranian Context

In the case of Iran, its geopolitical codes are shaped by a combination of ideological commitments, historical experiences, and pragmatic strategic calculations. Since the 1979 Revolution, Iran has oriented its foreign policy around principles such as resistance to external intervention, support for non-state actors in the region, and the projection of influence through the Axis of Resistance. These strategic choices reflect Iran's broader geopolitical calculations, including balancing ideological objectives with the realities of regional power dynamics and evolving security challenges. By analyzing Iran's geopolitical codes through Flint's framework, this study examines how recent developments—the collapse of the Syrian regime, U.S. maximum pressure policies, and the 12-day war with Israel—have prompted a recalibration of Tehran's orientation toward the region and the world.

The policies of the Iranian government, operating under the framework of the Islamic Republic, is rooted in Islamic principles and shaped by distinct Iranian Shiite ideologies. Its foreign policy (geopolitical codes) is guided by a set of core doctrines that include resisting global hegemony and confronting what it terms "global arrogance", advocating for justice within the international system, promoting a transnational, umma-centric approach to national security, supporting and prioritizing Islamic movements to advance Islamic thought globally, particularly within Muslim-majority nations, and standing in solidarity with the oppressed across the world in opposition to oppressive powers. These principles reflect the Islamic Republic of Iran's ideological commitment to reshaping global dynamics according to mentioned policies (Mahdие & Salehabadi, 2023). Based on the definition of geopolitical codes and related calculations, this research will focus on supporting and prioritizing Islamic movements (the Axis of Resistance) as a geopolitical code of Iran in the Middle East that has been challenged amid the weakening of the Axis of Resistance.

According to Flint's five calculations, the geopolitical codes of Iran can be addressed as follows: allies include Syria, Hezbollah, Houthis, and Iraqi militias; enemies consist of Israel, the United States, and their allies in the Middle East. Maintaining allies involves financial and military support, deployment of IRGC

forces in Syria and Lebanon, use of intelligence services, as well as investment in infrastructure, education, and energy sectors. Countering enemies consists of the use of asymmetric warfare and proxy networks, along with the forward defense strategy of projecting conflict beyond Iran's borders. Finally, the justification of these geopolitical codes includes Iran's ideological commitment to resisting global hegemony and supporting the oppressed, advocating for justice within the international system, promoting a transnational, umma-centric approach to national security, and supporting and prioritizing Islamic movements. However, after the 7th of October attacks and the collapse of the Syrian regime, Iran's geopolitical codes shifted significantly. Syria's fall disrupted Iran's logistical and strategic access to Hezbollah and other allies, while Hezbollah itself faced growing domestic pressure in Lebanon. Iran's ability to support proxies in Iraq and Yemen declined, and its confrontation with Israel escalated into direct conflict during the 12-day war. As a result, Iran's geopolitical codes became more constrained, forcing Tehran to recalibrate its geopolitical codes while still maintaining its ideological narrative, albeit with reduced operational capacity. Iran's geopolitical codes before and after the 7th of October attacks are summarized as follow:

The table 1.1 is extracted from different sections of the study specially 1.1-1.4.

Geopolitical Code Calculation	Before 7 th October Attacks	After 7 th October Attacks
Allies	Axis of Resistance: <ul style="list-style-type: none"> • Syria • Hezbollah • Hamas • Houthis • Iraqi militias 	<ul style="list-style-type: none"> • Huothis, • Iraqi Militia (inactive) • Hezbollah under pressure • Syria Lost
Enemies	<ul style="list-style-type: none"> • Israel • U.S. • their regional allies (Saudi Arabia, Bahrain, etc.) 	<ul style="list-style-type: none"> • Israel • U.S. • their regional allies (Saudi Arabia, Bahrain, etc.)
Means of Supporting Allies	<ul style="list-style-type: none"> • Strategic use of Syria for logistics and arms transfer 	<ul style="list-style-type: none"> • Proxy support weakened due to loss of Syrian corridor • Reduced militia activity in Iraq

	<ul style="list-style-type: none"> Financial and ideological support to Axis groups 	<ul style="list-style-type: none"> Hezbollah facing domestic constraints Houthi operations declining in Bab al-Mandab
Means of Counteracting Enemies	<ul style="list-style-type: none"> Asymmetric warfare Forward defense strategy Regional deterrence through Axis proxies 	<ul style="list-style-type: none"> Direct confrontation (e.g., 12-day war with Israel) Strategic recalibration due to weakened Axis Limited capacity for deterrence and projection
Justification to Public & Global Community	<ul style="list-style-type: none"> Defense of oppressed Muslims Resistance against Zionism and Western hegemony Promotion of Islamic unity and justice 	<ul style="list-style-type: none"> Continued ideological justification Increased emphasis on national security and survival Struggles to reconcile ideological commitments with pragmatic constraints

Based on Flint's definition of geopolitical codes and the associated calculations, this research focuses on Iran's support and prioritization of Islamic movements—the Axis of Resistance—as a central geopolitical code in the Middle East. This code, however, has been increasingly challenged amid the weakening of the Axis of Resistance and shifting regional dynamics.

5. The Weakening of the Axis of Resistance

During the conflict with Israel in 2024, the Axis of Resistance weakened seriously or even was on the verge of defeat (Mansour et al., 2025). After the weakening of the Axis of Resistance and the collapse of the Syrian regime, Iran is left with no real proxy in the region other than the Houthis in Yemen. According to James Jeffry "This is a totally unprecedented collapse of a regional hegemon" (Hawley, 2024).

Hezbollah is considered as a strategic weapon of the Islamic Republic of Iran. To access and support the Hezbollah, Iran was using Syria as communication and strategic bridge. and the change of government in Syria means cutting off this communication bridge, therefore the importance of the survival of Bashar al-Assad's government in order to maintain this relationship as best as possible is very

important for the Islamic Republic of Iran. According to experts, since Syria has been Iran's communication bridge with Lebanon's Hezbollah and the Palestinian Islamic Jihad and Hamas movements over the past years, Damascus has become more important for Tehran's leaders. Syria is the only Arab country that is at the forefront of the fight against Israel (Massoud Nya, 2018). However, important Syria was, on December 8, 2024, the Syrian regime collapsed, and opposition armed forces took the control of Damascus. Next section will explain the collapse of Syrian regime.

5.1 Collapse of the Syrian Regime

Syrian regime was the oldest member of the Axis of Resistance and the cornerstone of Iran's regional strategy. It was among the first countries that recognized Islamic Republic of Iran and the main Arab country in supporting of Iran as a friend during Iraq-Iran war (Mahmoudian, 2025). Since the military withdrawal of Syria from Lebanon in 2005, the partnership between Iran and Syria has increasingly benefited Iran and this country has remained important for establishing a favorable security position in Lebanon (Nerguizian, 2013). Due to its geographical and strategic location, Syria has been the focus of Iran as a bridge to reach the Mediterranean, which justifies maintaining and improving the relationship with the Syrian government. The neighborhood with Palestine, Lebanon, Türkiye and Iraq also clearly shows the geopolitical importance and strategic role of this country in regional and international relations. Syria is the backbone of the Axis of Resistance, and the weakening of Syria means the weakening of the Axis of Resistance (Massoud Nya et al., 2018).

Additionally, Syria was the strategic ally of the Islamic Republic of Iran and the main link of the Islamic resistance in the region. According to Massoud Nya et al. (2018) Syria is not only a strategically important to the Islamic Republic of Iran, but the type of government in Damascus also plays a decisive role in the future equations of the Middle East region and the national interests of the Islamic Republic. The diplomatic relations between the Islamic Republic of Iran and Syria during the last four decades can be considered one of the most stable relations

among the countries in the region. The evidence and documents indicate that Iran supports the Assad government against its internal regional and extra-regional opponents because the fall of the Assad government will change the strategic equations in the region to the detriment of Iran. Syria is a key player in the competition between Iran and America in the Eastern Mediterranean and has been the most important strategic partner of Iran during the past thirty years.

After weakening of the Hamas and Hezbollah by Israel, Syria the bridge between the Axis of Resistance forces became the next target of Israel. The overthrow of Assad regime happened by the financial and logistical support of Turkey (Mazaheri, 2024). On the collapse of the Syrian regime Stent et al. (2024) argue that the main winner of this collapse is Turkey while countries such as Iran, Russia, and Gulf countries that have normalized their relationships with Assad recently are the loser. Assad was referred to as the "front end of the Axis of Resistance" by Hossein Akbari, Iran's ambassador to Syria. However, a weakened Iran was unable and unwilling to defend Bashar al-Assad when the time came. The only state in the Axis of Resistance collapsed in a matter of days (Hawley, 2024). Several factors contributed to Syrian regime collapse including the Lebanon war that weakened Assad by depriving him of Hezbollah's partisan military leverage, Russian retrenchment, economic breakdown of Syria, Iran's waning support and etc. (Hossieni, 2025^c and Diyani Nejad, 2025).

Assad's fall reversed the progress Iran has made in Syria since 2011. At the start of the Syrian civil war, Iran stepped in to support Assad, provide Hezbollah more territory, and keep the Axis of Resistance networks in Iraq and Lebanon protected (Carl, 2024). For the foreseeable future, the broad Iranian agenda in the Levant will come to an end with the overthrow of the Bashar al Assad government in Syria. Tehran lost its prime gateway into the Levant by the collapse of Bashar Assad. This loss challenges the fundamental beliefs and concepts that have long guided Iran's policy in the Middle East (Ibid, 2024). Iran's geopolitical codes, which were established with the backing of the resistance axis, particularly the Syrian regime, are now being questioned. As Al-Khoury (2025) mentioned following the fall of Bashar Al-Asad and the rise of Ahmad al-Sharaa (Abu Muhammad al-Julani) to

power in Damascus, Syria shifted as a an integral part of the Axis of Resistance to a battleground for competing regional agendas.

5.2 Iran's Geopolitical Codes after the collapse of Syrian Regime

Iran's support and engagement in Syrian crisis has made different challenges for Iran. These challenges had political, economic, security-military, and human costs that Iran paid for protecting Syrian regime as a member of the Axis of Resistance and a bridge between these forces. The most important political costs that Iran has suffered include creating challenges between Iran and neighboring countries (specially Turkey), hostile relations between Riyadh and Tehran, Increased pressure and international sanctions against Iran, and extra conditions and pressure during deals on nuclear weapons (Carl, 2024; Mansour et al., 2025, and Massoud Nya, 2018).

Why does Iran consider Syria to be strategically significant?

Due to its geographical and strategic location, Syria has been the focus of Iran as a bridge to reach the Mediterranean, which justifies maintaining and improving the relationship with the Syrian government. The neighborhood with Palestine, Lebanon, Türkiye and Iraq also clearly shows the geopolitical importance and strategic role of this country in regional and international relations. Syria is the backbone of the Axis of Resistance, and the weakening of Syria means the weakening of the Axis of Resistance (Azizi & Barnes-Dacey, 2024 and Massoud Nya, 2018).

The Axis of Resistance is an important component of Iran's security doctrine. Hence, there is a mutual security dependency between Iran and the Axis of Resistance. This mutual dependency means that Iran's security is tied to security stability in the Axis of Resistance. Therefore, that's why the overthrow of the government of Bashar al-Assad weakens the Axis of Resistance and isolates the Shiite discourse of the Islamic Republic of Iran. As a result, it will cause the loss of the Syrian front and Iran's lack of access to Hizballah and Hamas, the superiority

of Saudi Arabia, Iran's rival governments in the region and finally the decline of Iran's security factor (Adami and Keshavarz Moghadam, 2015).

Regarding the future of region and the Islamic Republic of Iran's response to the new development in Middle East, Mazaheri (2024) stated that Isarel will follow the same expansionist and aggressive strategies and will continue with other branches of the Axis of Resistance including in Iraq and Yemen, and the threats and subversive attacks against Iran will also intensify. In such circumstances, it seems that the Islamic Republic of Iran and the Axis of Resistance must find themselves in a position of renewal and strength. The resistance forces in Iraq and Yemen must, while strengthening their position in society, build coalitions with different parties and groups and expand their network among the people of their countries. By the fall of Syrian regime, Iran has lost an important ally and a strategic bridge which provided an easy access of the Axis of Resistance to the resources. This access of Iran gave it an open hand in negotiating with Western countries, especially Obama administration. However, the new administration of the United States has followed tough measures against Iran.

5.3 The Policies of the Trump New Administration

The National Security Strategy released by President George W. Bush in March 2006. It was an annual revision of the country's geopolitical code. Iran, an Islamic theocracy vying for possessing of the atomic bomb, was recognized as the biggest threat to the United States. Throughout the Obama administration, Iran has been viewed as a geopolitical threat to the United States (Flint and Taylor, 2018). The identification of Iran as the most prominent threat to the United States has been a part of other administrations especially the new administration of the United States.

On February 4, 2025, President Donald J. Trump signed a National Security Presidential Memorandum (NSPM) restoring maximum pressure on the government of the Islamic Republic of Iran, denying Iran all paths to a nuclear weapon, and countering Iran's malign influence abroad.

- The NSPM establishes that:

- Iran should be denied a nuclear weapon and intercontinental ballistic missiles;
- Iran's terrorist network should be neutralized; and
- Iran's aggressive development of missiles, as well as other asymmetric and conventional weapons capabilities, should be countered.

(The White House, 2025)

Iran's network is the Axis of Resistance including Hamas, Hezbollah, Houthis, and Iraqi Militias that are considered by the US as terrorist groups. Accordingly, in 2025, the NSPM directed the secretary of the treasury to revise and revoke any general license or guideline that offers Iran or any of its proxies any kind of financial or economic help (Andreeff, Lis and Logsdon, 2025). Additionally, US strikes against Yemeni Houthis on March 15, have various objectives. In an interview, US Secretary of Defense Pete Hegseth stated, "We will stop when the Houthis stop their attacks." However, US officials have also made it clear that they blame Iran for Houthi attacks, which has equipped, trained, and supplied the Houthis with ship movement intelligence. Trump recently said that if the Houthis do not submit, Iran would pay a price, most likely a military attack on Iran itself (Pino, 2025). This strategy of the US has two aims including reducing threats by other proxies in the region and engaging Tehran in nuclear program negotiations.

Despite attacks on Houthis and threatening Iran, the US president has sent a letter to Iran on negotiations with two-month deadline. Regarding negotiations, On March, Khamenei in a meeting with Iran's official mentioned that the aim of some countries [US] is not to negotiate but to impose their will. He mentioned that if we accept some issues, they will raise some other expectations that Iran is not going to fulfil them. This can include country's defense capability, country's international capabilities and other issues. He calls this domination or imposing of their will on Iran (Khamenei.ir, 2025). Later, on the content of the letter, Iran's foreign minister, Abbas Araghchi mentioned that "Trump's letter was more a threat, but it claims to have opportunities. We paid attention to all points held in the letter and will consider

both threat and opportunity in our response," (Reuters, 2025). Despite Khamenei's early rejection of negation, Araqchi has mentioned that Iran will not negotiate with the US as long as Washington levels "pressure, threats and sanctions" (Ibid, 2025). There are some signs that Iran is taking a defensive position as in his recent travel to Iraq, commander of the Iranian Revolutionary Guards' Quds Forces Esmail Qaani has warned Iraqi armed factions against any provocation on Americans or Israelis which will result in their attacks against them as it happened to Houthis in Yemen (Saray, 2025).

5.4 The 12-Day War Between Iran and Israel

The 12-day war refers to the intensive military confrontation between Israel-Iran that erupted on June 15, 2025, marking a dramatic escalation in regional tensions (12DayWar.org Historical Archive, 2025). Israel started pre-emptive strikes against nuclear facilities of Iran under the codename Operation Rising Lion. In retaliation, Iran deployed a combination of ballistic missile and drone strikes, as well as cyber-attacks. Iranian proxy forces—traditionally active in regional conflicts—remained absent from direct engagement. It happened due to a combination of Israeli pre-war degradation of proxy capabilities and internal political constraints (Saab & White, 2025). A weakened Axis of Resistance and Israel's October 2024 strike on Iran that destroyed Tehran's strategic air defense system made an excellent opportunity for Israel to attack Iran (Atlantic Council experts, 2025). On starting of war, Iran's Supreme Leader, Ali Khamenei, declared that the Islamic Republic neither sought nor welcomed war. While acknowledging the Zionist regime as a malignant force and condemning the American government's support for it, he made clear that Iran did not initiate the confrontation—war was not its choice. He further stated that Iran entered the conflict with determination, not out of desire, but out of necessity (Khamenei.ir, 2025b). This statement by Iran's supreme leader underscored Iran's defensive doctrine as a response to attacks by Israel.

Several factors contributed to the escalation of the conflict between Israel and Iran including Iran's regional hegemonic ambitions through the support of proxies, Iran's nuclear program expansion, tensions in the strait of Hormuz, cyber-attacks,

and etc. (12DayWar.org Historical Archive, 2025). The 12-day war between Isreal and Iran was a turning point in the geopolitical landscape of the Middle East. It exposed the fragility of Iran's proxies as the backbone of the defensive forward doctrine for fighting against Israel.

6. Iran's Geopolitical codes Amid Axis Weakening

Iran has used different geopolitical codes before and after the weakening of the Axis of Resistance. Both official statements by the supreme leader and the foreign ministry have shifted after the weakening of the Axis of Resistance. Additionally, scholars have highlighted the shifts in Iran's geopolitical codes.

In two speeches delivered in late 2023 and 2024 by Ali Khamenei, Iran's support for the Axis of Resistance was emphasized as a national and moral duty. Khamenei underscored that aiding the resistance is duty upon all, while any form of support for the Zionist regime constitutes crime and an act of betrayal. Additionally, Khamenei emphasized Iran's pivotal role in expanding and strengthening the Axis of Resistance. He asserted that the Islamic Republic of Iran was instrumental in shaping and empowering these forces. Khamenei described the Zionist regime's longstanding "iron fist" policy toward the defenseless Palestinian people as a campaign of cruelty, terror, and oppression, devoid of moral, humanitarian, and religious considerations. Within this context of sustained injustice, the Resistance Front emerged as a collective response to occupation. He stressed that the establishment of the Islamic Republic further galvanized this front, transforming it into a powerful force of regional defiance and ideological resilience (Khamenei.ir, 2023 and Khamenei.ir, 2024). The foreign ministry has followed the same discourse on Iran's geopolitical codes regarding the Axis of Resistance. Accordingly, before the fall of Syrian government, in an announcement the Spokesperson for Iran's Foreign Ministry, Esmaeil Baqaei reiterated the Islamic Republic of Iran's unwavering support for the Lebanese government, people, and resistance movement (*Ministry of Foreign Affairs of the Islamic Republic of Iran*, 2024).

Nevertheless, the political discourse and geopolitical codes of Iran have changed after the weakening of the Axis of Resistance. In a speech on 23/03/2025, Khamenei

highlights the point of mistakenly characterizing the region's resistance movements as mere Iranian proxy forces. He states that the Yemeni people are driven by their own convictions, and resistance movements are motivated by indigenous struggles, not external directives. The Islamic Republic of Iran does not require proxies—these groups act on their own behalf. These nations resist the aggression, atrocities, and injustices perpetrated by the Zionist regime not because Iran commands them to, but because they themselves reject oppression. The West's fundamental error lies in assuming these movements operate at Iran's behest. Iran's position is clear, and so is theirs. These are sovereign voices rising against tyranny—not proxies, but partners in resistance (Khamenei.ir, 2025d).

Additionally, the discourse of the foreign ministry also has changed after the weakening of the Axis of Resistance. In this regard, the spokesperson for the Iranian Foreign Ministry, Esmail Baqaei rejected an allegation by the US president that Iran is interfering in Gaza ceasefire negotiations, emphasizing that Hamas negotiators are fully capable of recognizing and pursuing the best interests of the oppressed people of Gaza, with no need for third-party intervention. Accordingly, Seyyed Abbas Araghchi reiterates the right of Ghaze people to determine their own destiny and the political system governing their land (Ministry of Foreign Affairs of the Islamic Republic of Iran, 2025).

Furthermore, on the recalculation of Iran's geopolitical codes after the weakening of the Axis of Resistance, the former Iran ambassador to Jordan, Nosratollah Tajik stated that Iran and its resistance allies should avoid reverting to outdated strategies and must reassess and revise their approaches while upholding core principles. This should happen through embracing new methods focused on technology, soft power, and public engagement to build broader alliances and adapt to shifting global dynamics. He emphasized the growing influence of NGOs and public opinion and the need to move beyond military-centric tactics toward more inclusive and strategic forms of influence. He highlighted that redefining Iran's regional strategy must begin at home with a coherent and stable domestic policy—economically, socially, and politically—to craft an effective and credible foreign policy. Respecting changes in the internal politics of Iran, Raine (2025) argues that Iran

utilizes a comprehensive approach towards its people and make the consequences of the war a political capital. This approach will be based on nationalism and establishing a unity of purpose in resisting external aggression. To achieve these purposes, Iran will utilize some tactical domestic concessions as it has done before (Raine, 2025). Only with internal discipline can Iran shift from a militarized approach to one that prioritizes diplomacy and strategic political engagement. This transition aligns Iran with international norms, making it easier to build alliances, foster consensus, and pursue national interests. It is time to reassess goals, clarify strategies, and adapt to new realities—not react impulsively to setbacks (Fararu, 2024). Based on the analysis of both official statements and the literature, Iran's posture after the weakening of the Axis of Resistance has shifted from a direct and forward defense doctrine aimed at supporting the axis to a more defensive and ideologically driven support of the Axis of Resistance forces. The Iranian political discourse portrays these forces as grassroots movements opposing Israel, grounded in ideological conviction. They have been increasingly motivated to engage more actively in the political process and to adopt non-military approaches in pursuit of their goals.

7. Conclusion

Series of interconnected events has caused Iran to recalibrate its geopolitical codes. Developments including the collapse of the Syrian regime, U.S. maximum pressure policies, and the 12-day war have revealed contradictions between Iran's ideological support for the Axis of Resistance and its pragmatic geopolitical adjustments. Despite official claims of strength, the axis's effectiveness has declined, and Iran's regional influence is waning.

Iran's geopolitical codes after forty years of investing in the support and equipping of the Axis of Resistance faced serious challenges recently. The weakening of the Axis of Resistance first began by the defeat of Hamas, then the weakening of Hezbollah by killing its key figures and dismantling the organization's structure was the first sequence of events that challenged Iran's geopolitical codes. Additionally, the collapse of the Syrian regime, the maximum pressure policy of the new

administration of the United States and Israel's direct attacks on Iran were the key driving forces in shifting Iran's foreign policy. The weakening of the Axis of Resistance mainly has resulted due to the collapse of the Syrian regime as the main bridge for Iran to have access to the Axis of Resistance. Alongside the collapse of the Syrian regime, the maximus pressure of the new administration of the United States imposed pressure on Iran to change its behaviour in supporting the Axis of Resistance and its military ambitions in the region. Iran has limited its support and equipping of the Axis of Resistance forces.

As it has been highlighted by Iranian officials, returning to ideological support and utilizing political participation in the context of the existing political systems is the policy that Iran is motivating the forces of the Axis of Resistance to rely on.

This study contributes to Flint's framework of geopolitical codes by illustrating how a state's ideological commitments and pragmatic strategic calculations interact in practice. The case of Iran demonstrates that geopolitical codes are not static; they evolve in response to external pressures and regional shifts. Specifically, the disruption of a long-standing network of allies and proxies, such as the Axis of Resistance, highlights how tensions between normative objectives and operational capabilities can drive a recalibration of a state's geopolitical orientation, enriching the theoretical understanding of how geopolitical codes adapt under stress.

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The Effect of Motivation on Employee Engagement Among Academic and Non-academic Staff: A Case Study of Tishk International University

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Abstract

The aim of this research was to study the effect of both intrinsic and extrinsic motivation on employee engagement in private sectors, particularly in the academic landscape. To achieve the intended objectives of the study, a quantitative research approach was used. In this study, primary sources of data have been used by collecting a structured questionnaire. The targeted group for this study selected were the academic and non-academic staff of Tishk International University (TIU). A sample size of 170 surveys was collected and analysed from these employees. Additionally, statistical package for social science (SPSS) was used to test of statistics, including reliability analysis, correlation, analysis of variance (ANOVA), and multiple regression analysis. The study reveals a positive significant relationship between both motivational types and employee engagement. The results further show, that the relationship and effect of extrinsic motivation were slightly stronger on employee engagement as compared to intrinsic motivation. As a recommendation, organizations should identify best possible ways to motivate their employees understanding the ways that motivate them. Managers have to provide clear organizational goals for employees. Finally, organizations should connect employees' goals with the company's vision to work toward a common goal.

Keywords: *Employee engagement, Extrinsic motivation, Intrinsic motivation, Motivation, Private sector*

1. Introduction

Organizations can motivate their employees in two different ways, which are intrinsic and extrinsic, that are able to take the engagement of employees to another level (Waseem Khan, 2013). Humans generally have different manners to be motivated. Intrinsic motivation is the outcome of the satisfaction that an employee

may experience while they find what they do enjoyable, meaningful, interesting, etc. (Waseem Khan, 2013). In the other hand, extrinsic motivation is the willingness of obtaining an outcome such as, monetary rewards, job security, etc. (Waseem Khan, 2013).

Achieving the best possible performance though achieving organizational goals requires active engagement of the employees, such an engagement requires job satisfaction through creating a healthy environment where people will be able to work happily, loyally, responsibly, creatively, efficiently and effectively, indeed, to show passion for their tasks within their work. Discovering the right factors of motivation that motivate the employees is an important matter as employees are a valuable strategic asset for organizations (Riyanto, Endri, & Herlisha, 2021). Both motivational main factors effects job engagement which means how satisfied employees are with their work and also it does affect the organization's success by turnover intention that either an employee wants to stay or leave the organization (Miao, Rhee, & Jun, 2020). Regardless of the motivation today's highly competitive world has given us enough reasons that organizations has to search for different strategies to survive and achieve success, one of the strategies that is used to achieve their desired performance is to engage their employees to their works (Engidaw, 2021); (Riyanto, Endri, & Herlisha, 2021).

Universities, Colleges, and all other educational institutions play a very crucial role in shaping not only student's future but overall country's future, which this also depends on the quality of the education that it delivers. The quality of education depends on the academic staff, an unmotivated staff are likely to put little effort into a task that is even their responsibility, which results in low quality work at the end, not wanting to improve their work is another concern, while a motivated staff are able to give it all their best, they are more effective, productive in a way sometimes their efforts goes even beyond their responsibilities (Engidaw, 2021). Obviously, there is a significant different between two students that one has been under effect of an unmotivated academic staff and the other one has been under effect of a motivated staff. If the students get high quality education the probability of

contributing to their future workplace in a more effective and efficient way is higher. For the above-mentioned reasons this study aims to measure the effect of motivation on employee engagement at TIU focusing on the academic staff. One of the main reasons to conduct this research, especially towards the faculty members, is that educational institutions with their precious responsibility of delivering knowledge have a significant impact in shaping future professionals.

In the Kurdistan region, the higher education sector, especially private universities, has been expanding very fast over the past ten years. However, there is lack of research on how motivation affects the engagement of employees within these universities. While most of the studies have researched motivation and employee engagement, few have focused on the relationship between them in the academic field. Most of the previous studies focused on businesses, pharmacies, governmental ministries (Waseem Khan, 2013). Moreover, this research aims at finding this gap by investigating the relationship between motivation and employee engagement among faculty members at Tishk International University.

2.Method

The study adopts a quantitative research approach in order to achieve the objectives of the study. The data will be collected by giving the questionnaire to the chosen employees at Tishk International University. The questionnaire will be distributed physically for Tishk's staff to respond. The study will ensure the validity of the variables through conducting validity tests. After collecting the data, the researcher will conduct correlation and regression to measure the impact of each variable on employee performance. This will happen through the use of statistical tools SPSS. correlation has been used to address the relationship between the independent variable (Motivation Types) and dependent variable (Employee Engagement). Regression has been used to show the effect of independent variables on the depended variable. The survey has four parts. The first one is about the staff's demographic, it includes questions about their: age, gender, education level, current position in the organization, and years of service in the organization. Section two and three of the survey were aimed at collecting data about intrinsic and extrinsic motivations each though 8 items, that have been highlighted in the study by

(Engidaw, 2021). The fourth and last section was aimed at collecting data about employee engagement in the TIU by asking the academic staff 12 items (Engidaw, 2021), to fill the survey using a Likert Scale: 1- Strongly Disagree, 2-Disagree, 3- Neutral, 4-Agree, 5-Strongly Agree. This study focuses on the academic non-academic staff at Tishk International University. The research population aimed to target all faculty members working at TIU via simple random sampling approach. However, only 170 surveys were returned fully completed.

Hypothesis - H0: Indicates the null hypothesis, while H1 shows the three-alternative hypothesis.

H0 Intrinsic Motivation has no significant impact on employee engagement

H1 Intrinsic Motivation has a significant impact on employee engagement

H0 Extrinsic Motivation has no significant impact on employee engagement

H1 Extrinsic Motivation has a significant impact on employee engagement

Conceptual Framework

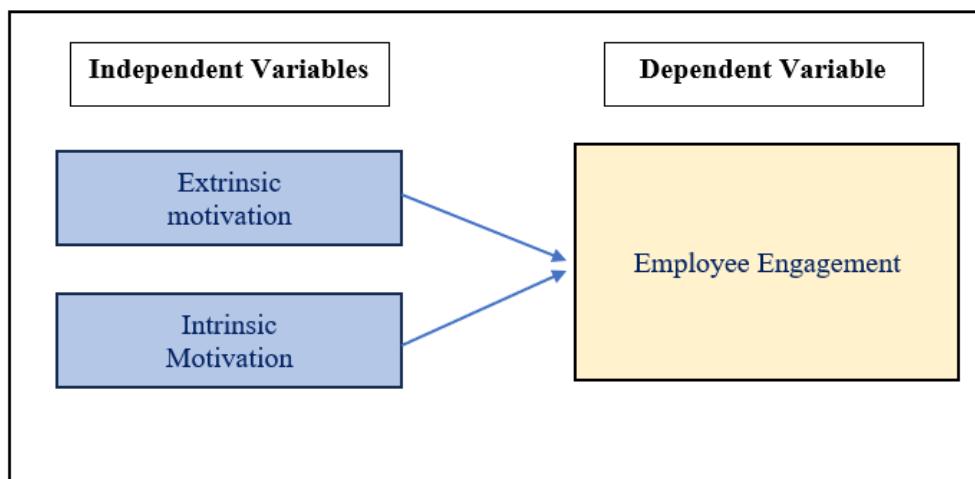


Figure 1.0 Conceptual Framework

3. Literature Review

The concept of motivation is directly related to quality of the work, effort applied to a task, and quitting or continuing the job. According to (Engidaw, 2021) high quality of work is result of tasks done by a motivated employee while in the other hand an unmotivated employee's works are lower quality (Engidaw, 2021). Therefore, the topic becomes an important matter, especially for organizations in private sector and educational institutes so that they investigate and find out best possible ways and factors to motivate their employees so that they provide their products and services with highest quality possible. Motivation of the employee is one of the important points that all the organization needs to focus on it, and its essayer for organization to achieve their objective and their goals by using motivation (Chukwuma. Edwin Maduka, 2014). (Nduka, 2016) Identifies motivation as a process of management, in which that focuses on providing more benefits to an organization by encouraging their employees so that they do their work with higher quality. The author continues and adds that employees can be motivated by proving them with reasons for doing what they are supposed to do. However, the motivational ways or factors has to be based on employees' needs that still has not been satisfied. According to (Michael Galanakis, 2022), both employee motivation and performance of organization are highly linked. The author defines motivation as the main part of both employee satisfaction and organizational performance. However, the author has mentioned that most of the organizations have not focused on motivation for their employees because they are not aware of the importance of motivation.

Obviously motivated and satisfied employees are more likely to be more active and bring new and effective ideas to the organization. Herzberg's dual-factor theory (1959, as cited in (Nduka, 2016)), introduced a theory that highlights two ways that can affect job satisfaction and motivation in different ways, which are motivators and hygiene factors. Motivators are those which by their present employees are more satisfied and are more engaged with their work, those are the factors that by their present they fulfil employees' needs and wants for development, achievements, and growth. The second one, which is Hygiene, are the factors that

are related to work environment, they are not only related but are an important part of the environment of the job. Those factors when they are not present or are not available cause dissatisfaction. Meaning, having them is important but only to the point of having a natural work environment. The point is that Motivators are the factors that make employees engaged with their work and to try and do their best in the work. Examples: Managers showing thanks or giving a reward to an employee for doing good work. In the other hand, Hygiene factors are those factors that are important to have but they do not directly improve satisfaction when they are being improved. Examples: Salary and Job security. In Herzberg's Two-Factor Theory satisfaction and dissatisfaction are not opposite of each other. For example: Removing dissatisfaction (fixing an issue in hygiene factors) does not create satisfaction, it does only remove dissatisfaction. Same with motivator factors as they can provide employees with satisfaction when they are improved but it will not fix a hygiene factor like poor work condition (Alshmemri, Shahwan-Akl, & Maude, 2017).

There is another famous theory which is Maslow's theory of motivation. According to Maslow's hierarchy of needs (1943, referenced in (McLeod, 2024)), is a psychological theory that explains human motivation in five levels. The lower levels are the main needs of living such as: Water, food, clothing, etc. While highest level is Self-Actualization which means the need of a person that needs to improve and archive their goals in life, in work motivation this is when employees can be creative and focused on their works. According to Maslow, people before anything are motivated by lower levels such as water and food, that must be first achieved, then higher levels can be next motivators when people try to achieve them, meaning that without the first levels other levels can't be achieved. However, the order of levels is not completely fixed. The Five Levels of the Hierarchy (McLeod, 2024):
1. Physiological Needs: Water, air, food, sleep, clothing. Humans can't do anything without achieving those needs. 2. Safety Needs: Security and safety such as police, hospitals, schools, financial security. 3. Social Needs: Friendship, marriage, relationships, community, love and support. 4. Esteem Needs: Being respected, valued, accepted. 5. Self-Actualization: The need to get personal goals and be the

best version of oneself. This theory in work is useful because managers can use it to identify employees' needs.

Another idea, created by Edward Deci and Richard Ryan in the 1980s (as mentioned in (Deci, Olafsen, & Ryan, 2017)), is Self-Determination Theory (SDT) that explains how people's motivation can be increased, how they can achieve their goals, and feel comfortable. The theory shows motivation can be divided into intrinsic and extrinsic. The STD theory also mentions three psychological needs: Autonomy (flexibility, ownership in job), Competence (learning new skills), Relatedness (team support). Autonomy is part of intrinsic motivation because it provides employees with enjoyment. However, tasks motivated by extrinsic factors can be autonomously motivated as well under the right conditions. If employees understand why their work is important, if they feel they have some freedom of how to do their work, and when they get support (Deci, Olafsen, & Ryan, 2017), they can do better. The Self-Determination Theory supports Herzberg's Two-Factor Theory and complements Maslow's hierarchy.

According to (Engidaw, 2021) there are two main motivation factors which are intrinsic and extrinsic motivation. These two motivational ways or factors effect employee engagement. In employees' jobs, motivation plays a very important role in shaping their behaviors. Motivation can be divided into intrinsic and extrinsic motivation. Both affect performance and behavior, but they can have different effects depending on conditions (Miao, Rhee, & Jun, 2020).

Intrinsic motivation refers to doing an activity because it is enjoyable or provides satisfaction. Example: A teacher who loves teaching and enjoys helping students learn is intrinsically motivated (Engidaw, 2021). Intrinsic motivation is doing work because it is satisfying, enjoyable, or provides opportunities for self-development (Miao, Rhee, & Jun, 2020). It is linked to better performance, stress management, lower burnout, and stronger engagement. Intrinsic motivation to learn refers to engaging in learning activities because they are enjoyable and interesting. Students who are intrinsically motivated show strong understanding, improved memory, and higher achievement (Augustyniak, et al., 2016). Universities contribute to economy

and society. To continue being productive, universities need to attract and keep talented academics. Motivation research helps us understand why some succeed and others struggle. Motivation plays a key role in academic performance under pressure (Watt & Richardson, 2020). Extrinsic motivation is when people engage in an activity not for enjoyment, but for external reward (Engidaw, 2021). Example: A lecturer working hard for extra pay.

Employees engage in activities for salary or promotions (Miao, Rhee, & Jun, 2020). A study by (Slama & Choukir, 2019) showed research funding positively affects productivity of faculty members in Saudi universities. Intrinsic and extrinsic motivation both play important roles in teacher performance (Schrita Osborne, 2017; Sivertson, 2018).

Employee engagement is defined by (Shkoler & Kimura, 2020) as how positively employees feel and are connected to their workplace. It has three characteristics: vigor (energetic), dedication (connected), absorption (focused). Engaged employees are more likely to stay and perform better. Engagement improves outcomes like profit and productivity (Singh V., 2019). Low engagement is a global issue affecting organizational performance (Motyka, 2018). Leaders must identify clear guidance to increase engagement (Nada & Singh, 2016). Employee engagement is important for success.

In today's competitive work environment, employees play a critical role in success. Motivation is a challenge in both public and private sectors. Existing studies explored various aspects of motivation, but there is limited research that examines how motivation influences employee engagement specifically within the private sector in the context of faculty members (S. Chintaloo, 2013).

4. Results and Discussion

4.1 Reliability

Table 1.0 Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.889	28

The above table shows the reliability for all (28) questions that have been analyzed in this study. Cronbach's Alpha was used to measure internal consistency of these items, showing that how well they work together for measuring the same concept. A high value (.882) suggests that the items are reliably measuring the same concept.

4.2 Demographic Questions

Table 2.0 Demographic Questions

#	Demographic	Items	Frequency	Percent
1	Age	24 - 33	109	64.1
		34 - 43	35	20.6
		44 - 53	7	4.1
		54+	17	11.2
2	Gender	Male	81	47.6
		Female	89	52.4
3	Education Level	Bachler	73	42.9
		Master	61	35.9
		Phd	32	18.8
		Post-doc	4	2.4
4	Current Position in the Organization	Research Assistant	77	45.3
		Assistant Lecturer	44	25.9
		Lecturer	27	15.9
		Assistant Professor	14	8.2
		Professor	8	4.7
5	Years of Service in the Organization	5 Years and below	97	57.1
		6-10 Years	46	27.1
		11-15 Years	16	9.4
		16-20 Years	3	1.8
		21 Years and above	8	4.7

4.3 Descriptive Statistics

Table 3.0 Summary descriptive of Intrinsic and Extrinsic Motivation and Employee Engagement

Items	N	Mean	Std. Deviation
I am interested in my work	170	4.29	.840
Organizational management is making the work interesting by introduction unique job contents	170	3.79	.885
I often receive appreciation for good work	170	3.84	.951
feedback on my job performance from the organization persuades me for more hard work	170	3.81	.892
Working for the organization gives me a sense of satisfaction	170	3.99	.863
Considering everything I am satisfied with my job	170	3.87	.888
Heavy workload and long working hours make me exhausted	170	4.01	1.006
I work below the level of my competences	170	3.12	1.116
Job security will give me a sense of engagement in my job	170	4.01	.913
Insecurity of job may add low quality to my work	170	3.78	1.025
My salary is satisfactory in relation to what I do	170	2.94	1.099
I earn the same as or more than other people in a similar job	170	3.06	1.142
I am getting a promotion on a fairly basis	170	2.91	1.161
My organization provides me with training that enables me to learn new things	170	3.32	.994
Recognition is an effective method for employee motivation	170	3.81	.910
I often get bonuses for good work	170	2.72	1.183
I know what is expected of me at work	170	4.14	.806
I have the materials and equipment I need to do my work right	170	3.78	1.006
At work, I have the opportunity to do what I do best every day	170	3.81	.925
In the last 7 days, I received recognition or praise for doing good work	170	3.23	1.240
My supervisor, or someone at work, seem to care about me as a person	170	3.80	1.024
There is someone at work who encourages my development	170	3.69	.968
At work, my opinions seem to count	170	3.66	.884
The mission/purpose of my company makes me feel my job is important	170	3.78	.921
My co-workers committed to doing quality work	170	3.87	.970
I Have a best friend at work	170	3.87	.970
In the last 6 months, someone at work talked to me about my progress	170	3.44	1.043
I had opportunities at work to learn and grow	170	3.66	1.049

Total Intrinsic Motivation	170	3.30	.468
Total Extrinsic motivation	170	3.32	.587
Total Employee Engagement	170	3.73	.589
Valid N (listwise)	170		

The table above explore that the intrinsic motivation, the question with most responses is “I am interested in my work”, the mean score is (4.29) and the standard deviation is (.840). This means the respondents strongly agree with the idea that their work is interesting. About the extrinsic motivation the item “Job security will give me a sense of engagement in my job” comes with most response with mean of (4.01) and the standard deviation of (.913). Regarding employee engagement, the variable with most value is “I know what is expected of me at work” with a mean score of (4.14) and a standard deviation of (.806), this shows that respondents see clarity as an important factor that effect their engagement. The end of the above table shows that totals of all our valuables. The total employee engagement has the highest mean score (3.73) that shows respondents generally feel engaged in their work. The total of extrinsic motivation with mean score of (3.32) shows a moderate level of agreement about external factors affecting motivation. Regarding the total intrinsic motivation that has a lower mean score (3.30), it does show that employees are also affected by intrinsic motivation.

4.4 Correlation Analysis

Table 4.0 Correlations Between Motivation Types and Employee Engagement

Correlations		Total Intrinsic Motivation	Total Extrinsic motivation	Total Employee Engagment
Total Intrinsic Motivation	Pearson Correlation	1	.517**	.522**
	Sig. (2-tailed)		.000	.000
	N	170	170	170
Total Extrinsic motivation	Pearson Correlation	.517**	1	.526**
	Sig. (2-tailed)	.000		.000
	N	170	170	170
Total Employee Engagment	Pearson Correlation	.522**	.526**	1
	Sig. (2-tailed)	.000	.000	
	N	170	170	170
**. Correlation is significant at the 0.01 level (2-tailed).				

The above table shows the Correlation Analysis, that measures the strength and direction of relationships between all three variables. Pearson correlation for intrinsic motivation and employee engagement is (.522), indicates that there is a moderately strong positive relationship, meaning that as intrinsic motivation increases, employee engagement also tends to increase. For extrinsic motivation and employee engagements the value is (.526) which also means a moderately strong positive relationship. This means extrinsic motivation is slightly more strongly associated with employee engagement. The p-value (.000) confirms that the correlation is statistically significant in both cases. Pearson Correlation of (.517) shows a moderately strong positive relationship between these two types of motivation meaning when intrinsic motivation is high, extrinsic motivation tends to be high as well, and same works for extrinsic motivation.

4.5 Regression Analysis

Table 5.0 Model Summary for Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.602 ^a	.362	.355	.473
a. Predictors: (Constant), Total Intrinsic Motivation , Total Extrinsic motivation				

As can be seen in table 5, which shows the results of regression analysis. The results show the impact of both of our independent variables: intrinsic motivation and extrinsic motivation on the dependent variable. The correlation coefficient (R) of (.602) indicates a moderately strong positive relationship between the values of independent variables: intrinsic and extrinsic motivation and the dependent variable. The R square (.362) indicates (36.2%) changes in the dependent variable can be described by both independent variables.

Table 6.0 ANOVA for Regression Analysis

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.229	2	10.615	47.433	.000 ^b
	Residual	37.371	167	.224		
	Total	58.600	169			
a. Dependent Variable: Total Employee Engagement						
b. Predictors: (Constant), Total Intrinsic Motivation , Total Extrinsic motivation						

In the above table, F (47.433) that in our case is a indicator used to check how much change in employee engagement can be explained by both intrinsic and extrinsic motivation compared to other changes. Sig (.000) shows that the model is highly significant, meaning intrinsic and extrinsic motivation types have a strong effect on explaining employee engagement.

Table 7.0 Coefficients for Regression Analysis

Coefficients ^a		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	1.143	.273		4.186	.000
	Total Extrinsic motivation	.351	.072	.350	4.848	.000
	Total Intrinsic Motivation	.430	.091	.341	4.726	.000

a. Dependent Variable: Total Employee Engagement

Table 7.7 Coefficients for Regression Analysis

The above tables show how much independent variables impacts employee engagement. In Unstandardized Coefficients the (Constant, B) that is (1.143) represents the baseline level of employee engagement considering both motivation types are zero. Moreover, Unstandardized Coefficients B, show how much the dependent variable changes when a one-unit increases in the independent variable. Total Extrinsic Motivation B (.351) explains that for every one-unit increase in extrinsic motivation, employee engagement increases by (.351) units. Total Intrinsic Motivation B (.430) explains that for every one-unit increase in intrinsic motivation, employee engagement increases by (.430) units.

Regarding the Standardized Coefficients Beta, that compares the strength of each independent variable's effect on the dependent variable. Extrinsic motivation (.350) has a slightly larger effect than intrinsic motivation (.341), but both have nearly equal impact on engagement. The p-values (.000) confirm that these effects are highly significant.

5. Findings & Conclusion

This study was aimed to analyse the effect of motivation on private sector, specifically on employee engagement at TIU focusing on faculty members. The mean score of independent variables: intrinsic (3.30) and extrinsic (3.32) motivation, and employee engagement (3.73) which is the dependent variable are in a moderate range. The table 4, show that there is a moderately strong and positive relationship between intrinsic and extrinsic motivation and employee engagement at a statistically significant level ($p < 0.01$). This indicates that if motivation

increase the engagement level of employees will also increase, and a decrease in motivation will also decrease the engagement. Furthermore, extrinsic motivation had a more moderate positive relationship with employee engagement as compared to intrinsic motivation as shown in table 4. Multiple regression analysis results show that R Square is (.362) and Adjusted R Square is (.355). This means that 36.2% of employee engagement is explained by motivation. This research answered the research questions through reviewing the literature and the survey: The study identified two types of motivation: intrinsic and extrinsic motivations. Both types have a significant and positive relationship with the engagement of employees, meaning higher motivational rates will increase the engagement level. Both intrinsic and extrinsic motivation have a moderately strong positive relationship with employee engagement at TIU. Specifically, intrinsic motivation has a Beta value of (.341), while extrinsic motivation having a Beta value of (.350) indicating that each significantly influences employee engagement. Also, the effect of extrinsic motivation with Beta value (.350) is slightly higher compared to intrinsic motivation (.341), meaning that external factors such as job security and rewards play a slightly larger role in driving engagement for the academic staff.

The study highlights the importance of intrinsic and extrinsic motivation in affecting employee engagement. Two alterative hypotheses were tested to answer the questions of the research. Also, a quantitative survey was prepared. A close-ended survey was used in the questionary as a survey tool, the study uses primary source of data. 170 respondents have filled out the survey and it has been collected; the survey includes 28 items. To give equal chances for all employees the survey has been distributed by a simple random sampling approach. Moreover, SPSS version 26 was used for data analyzation to test: reliability, (ANOVA) test, etc. The findings show that there is a significant positive relationship between motivation (R) of (.602) and employee engagement.

Hypothesis 1: The intrinsic motivation and employee engagement prelateship is a positive significant effect at the beta value of (.341) with a significance level of $p = 0.000$.

Hypothesis 2: There is a positive significant relationship between extrinsic motivation and employee engagement at the beta value of (.350) with a significant level of $p = 0.000$. Both, null hypothesis are rejected. The findings show that extrinsic motivation had a more moderate positive significant effect on engagement as compared to intrinsic motivation.

6. Recommendations

To increase employee engagement at TIU management should focus on developing both types of motivation by creating an environment that supports meaningful work and provides tangible rewards. Additionally, the management must assess the needs of their employees and identify more factors that affect their engagement. Both intrinsic and extrinsic motivational types have to be considered as both have a positive effect of engagement, which together they support each other to boost the engagement process of employees and their jobs. Future studies can focus on managers' engagement and their effect on the overall effect on organization or employees. Additionally, intrinsic and extrinsic motivation may have different effects for different ranks of academic staff, such as professors, assistant professors, and research assistants. Future studies should consider these differences to gain deeper insights into their effects

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Embracing Multicultural Citizenship: A Comprehensive Analysis of Legal Frameworks in Iraq and the Kurdistan Region

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Abstract

Iraq and the Kurdistan Region are characterized by remarkable cultural diversity, encompassing multiple languages, religions, ethnicities, and geographical distinctions. This research examines the implications of cultural differences within the legal frameworks of Iraq and the Kurdistan Region, recognizing the fundamental role of law in governance and its reflection of societal dynamics (Horowitz, 2000; McGarry & O'Leary, 2009). While acknowledging the prevailing Arab-Kurdish political dominance, this study emphasizes the importance of embracing a multicultural citizenship perspective that transcends current ethnocentric approaches. Through a comprehensive examination of constitutional provisions and human rights principles related to citizenship, this research evaluates how cultural diversity impacts legal outcomes and minority representation. Based on theories of democratic citizenship (Marshall, 1950; Kymlicka, 2001; Young, 2000), this paper proposes the need to foster an inclusive atmosphere as a driving force to political stability, social cohesion and democracy. The study evaluates the Iraqi constitutional law and the legislation of the Kurdish region to determine how well they can accommodate the multi-ethnic and multinational communities in Iraq. The applications in the multifaceted socio-cultural setting in Iraq and the Kurdistan Region can be assisted by the multicultural citizenship theoretical exploration. The paper represents a qualitative legal analysis that explores texts of the constitution, electoral laws and language policy. The findings indicate that constitutional recognition of diversity has gone a long way, particularly language rights and minority representation and that there are loopholes in the aspects of implementation and representation in provincial councils and electoral commissions. The paper critically examines the Iraqi Constitution of 2005 in which the expressions of culture are found in the preamble and the articles. It focuses on the necessity to follow the constitution and recognize the diverse communities better. It is recommended to improve official language laws to be a true mirror of the diversity of the Kurdistan Region, reinforce minority representation processes, and make human rights principles serve as the cornerstone of an inclusive society.

Keywords: Multicultural citizenship, Iraq, Kurdistan Region, Legal Framework, Human Rights, Constitutional Law, Minority Right

1. Background and Context

Iraq and the Kurdistan Region is among the most ethnically mixed political entities in the world having an intricate system of languages, religions, ethnic groups and regional identities (Dawisha, 2009; Natali, 2005). This is founded in the diversity that has developed through a millennia long history of interaction that has posed a challenge and opportunities to contemporary governance and law (Anderson and Stansfield, 2004). The legal systems of both Iraq and Kurdistan are not only philosophically grounded in the governance of these two regions and countries but also mirror the political, economic and social reality of the people that inhabit these two regions. These legal frameworks are thus expected to be in a position to adequately accommodate and protect the interests of all communities whereby none of the voices of cultures is sidelined. While Arab and Kurdish communities maintain political dominance in Iraq and the Kurdistan Region respectively, numerous other communities possess distinct languages, cultures, and traditions that differ significantly from majority definitions. These include Turkmen, Chaldean, Assyrian, Armenian, Yazidi, and other minority communities, each contributing to the region's rich cultural mosaic.

1.2 Problem Statement

The challenge of accommodating cultural diversity within legal frameworks becomes particularly acute when examined through human rights and citizenship perspectives. Human rights principles emphasize equality and non-discrimination, rejecting preferential treatment based on cultural characteristics (Donnelly, 2013). However, the reality of human diversity necessitates recognition that while all humans share fundamental equality, they possess distinct cultural, linguistic, and religious characteristics that cannot be ignored in governance structures (Parekh, 2000; Taylor, 1994).

This tension between universal equality and particular cultural needs has given rise to the concept of multicultural citizenship—a legal, political, and philosophical framework that seeks to address questions arising from cultural diversity while maintaining democratic principles and social cohesion.

1.3 Research Objectives

This research aims to:

1. Analyze how multicultural citizenship principles are embedded within Iraq's constitutional and legal frameworks.
2. Evaluate the effectiveness of current legal mechanisms in protecting minority rights and promoting cultural diversity.
3. Assess the compatibility of existing laws with the needs of Iraq's diverse communities.
4. Identify gaps in legal protection and representation for minority communities.
5. Propose recommendations for enhancing multicultural citizenship implementation.

1.4 Research Questions

The study addresses the following research questions:

1. To what extent do Iraq's constitutional and legal frameworks reflect multicultural citizenship principles?
2. How effectively do current electoral and language laws protect minority rights and ensure representation?
3. What are the main challenges and opportunities for implementing multicultural citizenship in Iraq and the Kurdistan Region?
4. How can legal frameworks be improved to better serve Iraq's diverse communities?

1.5 Significance of the Study

This research contributes to the growing literature on multicultural citizenship by examining its application in a complex Middle Eastern context. The study's significance lies in its potential to inform policy decisions, constitutional reforms, and legal developments that could enhance democratic governance and social stability in culturally diverse societies.

1.6 Literature Review and Theoretical Framework

1.6.1 Multicultural Citizenship Theory

The concept of multicultural citizenship has evolved significantly since the 1940s, particularly through the seminal work of T.H. Marshall, who identified three dimensions of citizenship: civil, political, and social rights. Civil rights encompass individual freedoms such as freedom of expression, belief, property ownership, and access to justice. Political rights provide active participation opportunities in public decision-making processes. Social rights ensure basic welfare and meaningful participation in society (Marshall, 1950). Contemporary scholars like Will Kymlicka (1995, 2001) have expanded this framework to address cultural diversity, arguing that traditional liberal citizenship models require adaptation to accommodate minority cultures within democratic societies. The multicultural citizenship outlined by Kymlicka is concerned with the importance of group-differentiated rights along with the individual rights of the national minorities and ethnic communities in particular (Kymlicka, 1995).

1.6.2 Constitutional Recognition of Diversity

The element of multicultural citizenship is reflected in cultural diversity that has been addressed in the constitution. It is also applicable to the theory of consociational democracy by Lijphart (2006) to explain how societies which are fragmented could achieve political stability through ensuring that the voices of all the big groups are represented and secured by the institutions. The situation in Iraq is peculiar and has its challenges and opportunities to implement these theoretical frameworks. The Iraqi Constitution of 2005 was created in the middle of the conflict, and is seen as an attempt to build the inclusive governmental structures in the society that is highly fragmented.

1.6.3 Language Rights and Cultural Expression

Language rights is one of the aspects of multicultural citizenship. The literature indicates that official status, right to education and delivery of public services are

essential elements of inclusive citizenship in as far as linguistic diversity is concerned (Patten and Kymlicka, 2003).

1.7 Methodology

1.7.1 Research Design

The study research method employed in the study of the present group is the qualitative analysis of legal research, the aspects of which are document analysis and constitutional interpretation. The research design employs the primary law texts, including the constitutions, the materials of law and the electoral laws to assess the application of the multicultural citizenship in the Kurdistan Region and Iraq.

1.7.2 Data Sources

Primary sources include:

- Iraqi Constitution of 2005
- Kurdistan Region Constitution (Draft)
- Iraqi Parliamentary Election Law No. 45 of 2013
- Provincial Council Election Laws
- Language legislation and cultural rights laws
- Kurdistan Region Oil and Gas Law No. 22 of 2007

Secondary sources encompass academic literature on multicultural citizenship, constitutional law, and Middle Eastern politics.

1.7.3 Analytical Framework

The analysis employs a three-level framework:

1. Constitutional Level: Examining constitutional provisions related to cultural diversity, minority rights, and citizenship
2. Legislative Level: Analyzing implementation laws, electoral systems, and language policies
3. Institutional Level: Assessing representation mechanisms, electoral commissions, and cultural institutions

1.8 Analysis and Findings

Constitutional Recognition of Cultural Diversity

1.6.3 Preamble and Foundational Principles

The Iraqi Constitution of 2005 demonstrates significant progress in recognizing cultural diversity (Brown, 2013; Salih, 2013). The preamble explicitly acknowledges that Iraq comprises "Arabs, Kurds, Turkmen, and other constituents," representing a constitutional confession of the country's multicultural reality (Iraqi Constitution, 2005, Preamble). Article 3 declares Iraq "a country of multiple nationalities, religions, and sects," establishing diversity as a foundational principle rather than an exception to be managed (Iraqi Constitution, 2005, Art. 3; Visser, 2010). This constitutional recognition creates legal obligations for all subsequent legislation to respect and protect cultural diversity (Al-Ali, 2014).

1.6.4 National and Ethnic Recognition

Several constitutional articles specifically address cultural diversity. Article 4 establishes both Arabic and Kurdish as official languages throughout Iraq, while recognizing Turkmen and Syriac as official languages in areas with significant populations of these communities (Iraqi Constitution, 2005, Art. 4). This provision represents substantial progress in linguistic rights recognition (Sheyholislami, 2011; Hassanpour, 2012). Article 125 guarantees "administrative, political, cultural and educational rights for the various nationalities, such as Turkmen, Chaldeans, Assyrians, and all other constituents." This article provides constitutional

foundation for group-differentiated rights essential to multicultural citizenship. Article 49 emphasizes that the Council of Representatives "represents the entire Iraqi people" and requires consideration of "representation of all components of the people." This establishes constitutional mandate for inclusive representation.

1.6.5 Religious Diversity Protection

The constitution addresses religious diversity through multiple provisions. Article 2 protects "the Islamic identity of the majority of the Iraqi people" while guaranteeing "full religious rights to freedom of religious belief and practice" for Christians, Yazidis, and Mandean Sabeans. Article 10 commits the state to respecting and protecting religious sites and ensuring free practice of religious rituals, regardless of sectarian affiliation. Article 14 prohibits discrimination based on "gender, race, ethnicity, nationality, origin, color, religion, sect, belief, opinion, economic or social status."

1.8.4 Electoral Laws and Minority Representation

1.8.4.1 Parliamentary Representation

The Iraqi Parliamentary Election Law No. 45 of 2013 allocates specific seats for minority communities:

- Christians: 5 seats (distributed across Baghdad, Nineveh, Duhok, and Erbil)
- Yazidis: 1 seat (Nineveh province)
- Mandean Sabeans: 1 seat (Baghdad)
- Shabak: 1 seat (Nineveh province)
- Kurdish Faili: 1 seat (Wasit province)

This quota system represents practical implementation of multicultural citizenship principles, ensuring minority representation despite demographic disadvantages (Reilly, 2001; McGarry & O'Leary, 2009).

1.8.4.2 Provincial Council Representation

Provincial council election laws have been amended multiple times to enhance minority representation:

- Baghdad: 3 seats for Armenians, Mandean Sabeans, and Kurdish Faili
- Nineveh: 3 seats for Kurds, Yazidis, and Shabak
- Basra: 1 seat for Kurds
- Wasit: 1 seat for Kurdish Faili
- Maysan: 1 seat for Mandean Sabeans

1.8.4.3 Language Policy Implementation

Official Language Framework

- Article 4 of the Iraqi Constitution establishes a comprehensive language policy:
- Arabic and Kurdish as federal official languages
- Official document publication in both languages
- Parliamentary and judicial proceedings in both languages
- Educational instruction in both languages
- Regional official languages where people are concentrated Turkmen and Syriac.

Educational Language Rights

The constitution has ensured that all communities receive education in the mother tongues with mechanisms put in place by the educational regulations and procedures.

1.8.4.4 Economic Dimensions of Multicultural Citizenship

Resource Distribution and Cultural Equity

Article 111 proclaims that ownership of all the Iraqi people in all regions and provinces covers oil and gas which forms a comprehensive structure in which benefits of the natural resources can be seen as inclusive. This is a provision of the constitution that is meant to ensure that ethnic or regional tension is not escalated by control of resources. Article 112 also involves the cooperation of the federal government with the regions and provinces in the management of oil and gas

sources such that the economic benefits are not extended to privileged groups in Iraq but to all the Iraqi communities.

Kurdistan Region Economic Autonomy

According to the Oil and Gas Law of Kurdistan Region No. 22 of 2007, the federalization can help the cultural autonomy on the one hand and the national unity on the other hand. Such legislation also enables this region to develop economic policies that suit its cultural attributes, albeit within the constitution.

1.9 Discussion

1.9.1 Achievements in Multicultural Citizenship Implementation

Analysis reveals that Iraq and the Kurdistan region have a lot of improvement on the constitutional recognition and the legal protection of culture. Key achievements include:

1. Constitutional Recognition: Multicultural reality in Iraq is expressly recognized in the documents which form the basis of the constitution.
2. Language Rights: Wide based official languages that protect large language sectors.
3. Political Representation: Quota systems in which the minority are assured of parliamentary and provincial representation.
4. Religious Protection: The constitutional rights and the religious protection.
5. Cultural Rights: The legal rights which protect cultural expression and education.

1.9.2 Challenges and Limitations

Some of the challenges that prevent full implementation of multicultural citizenship are as follows regardless of the constitutional advancements made:

Implementation Gaps

The provisions in the constitution exist but in practice, there is a variation in how the provisions are applied. Language services, cultural education, and minority representation in the government institutions should be strengthened.

Representation Mechanisms

As advantageous as they are, the current quota systems might not be responsive to demographic facts or societal preferences. Democratic legitimacy can be increased by making representation mechanisms more flexible.

Institutional Capacity

There is a higher need to give government organizations more resources to make them useful to various populations, including the multilingual services and the availability of culturally competent employees.

Comparative Perspectives

The manner of managing multicultural citizenship in Iraq can be said to be similar and different to other multicultural societies (Wimmer, 2013; Zubaida, 2002). The multi-lingual acknowledgement in the constitution corresponds to various nations like Canada and Belgium (Kymlicka, 2007), and the system of quota representation corresponds to Lebanon and Bosnia-Herzegovina (Lijphart, 1977; Reilly, 2001).

1.10 Conclusions and Recommendations

Key Findings

This literature demonstrates that Iraq and Kurdistan Region have done much in terms of constitutionally recognizing and legally protecting the cultural diversity. The Constitution of Iraq of 2005 amounts to the good foundation of multicultural citizenship with a direct recognition of the cultural communities, the general language rights, and the framework of minority representation.

There are, however, still loopholes between the constitutional expectation and reality. Enhanced organizational capability, enhanced representation processes, and empowering of the implementation processes could also be long way in ensuring that the multicultural citizenship is realized.

Recommendations

Constitutional and Legal Improvements

1. Clarify Language Implementation: Work out detailed regulations as to the requirements of language service in government institutions.
2. Improve Representation Systems: Think of flexible quota systems that will be more reflective of demographic shifts and community preferences.
3. Enhance Cultural Education: Increase mother-tongue education, and cultural preservation initiatives.

Institutional Reforms

1. Capacity Building: Invest into multilingual government services and culturally competent institutional capacity.
2. Minority Rights Commission: Instigate a separate commission to check multicultural citizenship execution.
3. Electoral System Review: Periodically review of electoral laws to make the representation of the minority effective.

Policy Implementation

1. Cultural Integration: Institute policies that facilitate inter-community communication and inter-community exchange.
2. Economic Inclusion: make programs to aid economic development be of use to all the communities equally.
3. Civil Society Support: Empower civil society groups who are the representatives of minority groups.

1.11 Future Research Directions

It is advised that further research should be done on:

1. Comparison of other multicultural citizenship in other contexts in the Middle East.
2. Measurement of the efficacy of implementation.
3. Social beliefs on the existing legal systems.

4. Possible economic impacts of multicultural policies.

1.12 Final Observations

The trend towards the formation of complete multicultural citizenship in both Iraq and the Kurdistan Region is an ongoing process that requires long-term will of the government structures, civil societies and communities themselves. Despite the existence of considerable constitutional and legal underpinnings, there remains a lot of work that needs to be done to ensure Iraq, a country with such cultural diversity, turns out to be a strength and not a source of division. It could be observed that the experience of the success of the multicultural citizenship in Iraq would serve as precedent to other multi-ethnic societies that are likely to face the same challenges (Modood, 2007; Banting and Kymlicka, 2006) that can be addressed through constitutional recognition, legal protection and institutional commitment to make frameworks of inclusion in the democratic governance of a society that has complex cultures.

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Integrating Inclusive Green Finance policies into National Financial Inclusion Strategies (NFIS) for best practices in SAARC Countries

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Abstract

Inclusive green finance aims to leverage financial inclusion for reducing the effects of climate change and environmental degradation, and to boost resilience against these problems. The main aim of gender-inclusive finance is to close the worldwide gap in financial access between genders by improving women's ability to access and use high-quality, reasonably priced financial services. Women's involvement in SAARC's environmental and climatic policymaking is restricted by social norms, financial rules, and other obstacles. In countries with limited opportunities, central banks and financial regulators face challenges in developing gender-inclusive financial policies to boost women's ability to cope with environmental degradation and climate change. This study is an exploratory qualitative in nature that was conducted based on secondary analysis research or Secondary Data Analysis (SDA). Data were collected from central banks and financial institutions of eight SAARC countries, namely Bangladesh, India, Pakistan, Sri Lanka, the Maldives, Bhutan, Nepal, and Afghanistan. The study investigated existing policies and practices of central banks and financial regulators in SAARC nations, with the goal of bolstering resilience to the adverse effects of climate change and environmental degradation by incorporating Gender Inclusive Finance and Inclusive Green Finance into the National Financial Inclusion Strategy (NFIS). The study used the conceptual framework of 4Ps (e.g., promotion, provision, protection & prevention) of inclusive green finance and gender inclusive finance. This study contributed to examining the integration of IGF and GFI into NFIS assessments to provide a more thorough approach to financial inclusion. The study also contributed to examining the level of integration of inclusive green finance and gender inclusive finance into NFIS to support financial institutions in building resilience against the negative impacts of climate change in SAARC countries. The research also helped explore strategies for enhancing climate change resilience in SAARC countries, with the intention of achieving sustainable development goals.

Keywords: Inclusive Green finance; Gender Inclusive Finance; Financial Inclusion; SAARC countries

1. Introduction

The United Nations Sustainable Development Goals (UNSDGs) regard financial inclusion as a crucial element in achieving sustainable development (AFI, 2017a). Financial inclusion is a broad concept that encompasses financial access, financial

education, and financial consumer protection (AFI, 2017a). Global financial inclusion has been incorporated into the international policy agenda and is increasingly being adopted in numerous countries (Jahan, 2019). The green economy's growing prominence as a policy focus on the path to sustainable development underscores the importance of financial inclusion to a nation's competitiveness (Berry, 2015; Collard, 2007; Prabhakar, 2019; Wang, 2021). In many developing countries, the Maya declaration is considered the main tool for increasing financial access through a public commitment by the central bank's monetary authority (AFI, 2021a).

Over the last ten years, more than 35 countries have adopted National Financial Inclusion strategies (NFIS), as reported by Koppula et al. (2020). Currently, a trend is developing at the national strategic level regarding financial inclusion and climate change, which may be addressed through National Financial Inclusion Strategies (NFIS) or other financial sector strategies (AFI, 2020b). Ensuring collaboration between financial stakeholders and the relevant government bodies is essential, especially in mitigating and lessening the effects of climate change (AFI, 2020a). Green finance has been increasing in importance over the past few years and has now become a key issue driving both new policies that promote sustainable development and the growth of financial markets, as noted in a 2016 UNEP report.

Researchers and policymakers have recently focused on green finance as a rapidly growing global issue related to environmental protection, climate change, and sustainable development problems (Akomea-Frimpong, 2021). A study recommends adopting a comprehensive approach that combines green finance and financial inclusion policies within a unified, all-encompassing green finance framework. The study, as referenced by Volz (2021), also observes that the IGF is tackling the dangers posed by climate change to social inclusion and poverty reduction, in addition to environmental risks affecting the financial system. Green finance that is inclusive seeks to mitigate the adverse impacts of climate change and enhance the ability of those affected by climate change to withstand its effects (Nayman, 2020). Implementing a financial inclusion policy is crucial to supporting climate change adaptation and mitigation efforts, which are also known as inclusive

green finance (AFI, 2020b). It is essential to implement a financial inclusion policy to facilitate climate change adaptation and mitigation efforts, commonly referred to as inclusive green finance (AFI, 2020b).

Currently, Inclusive Green Finance is gaining acceptance as a strategy for addressing the effects of climate change through financial inclusion policies and regulations, especially in developing countries (AFI, 2021e). In numerous developing nations, women are primarily responsible for both food production and ensuring a household's access to water, with the difficulty of these tasks escalating because of intensifying climate change impacts. Females are often disadvantaged due to gender disparities, as they heavily depend on natural resources that are susceptible to the effects of climate change.

Furthermore, women are underrepresented in the development of climate technologies, potentially resulting in a slow adoption of sustainable technology that can streamline tasks, like preparing food with advanced culinary techniques. (Richardson, 2015). In this context, green finance that is inclusive of gender can act as a starting point in redirecting finance towards adaptation to environmental change and low-carbon development, as noted by AFI (2022b). The contribution of this research is to examining the level of integration of inclusive green finance and gender inclusive finance into NFIS in building resilience against the negative impacts of climate change and environmental degradation in SAARC countries. This paper can assist in developing appropriate policy measures and strategies for enhancing climate change resilience through financial inclusion in SAARC countries, with the intention of achieving sustainable development goals.

1.1 Statement of the problem

Financial inclusion should be incorporated into local, national, and regional climate change adaptation strategies (Lea et al., 2020). Consequently, policymakers should take into account the synergy effect of financial inclusion when designing development and climate change policies (Renzhi, 2020). Research by Campiglio (2018) shows that the academic and policy discussions about the role of central banks and financial regulators in addressing climate-related financial risks have

greatly increased in the past few years. Some central banks have begun examining the consequences of climate change and the shift to a low-carbon economy for the financial industry (Campiglio, 2018).

At present, there are no policy synergies between expanding financial inclusion and reducing carbon emissions. As of now, relatively little research exists regarding how financial inclusion policies can specifically assist women in being more resilient to the risk of climate change (AFI, 2022b). Most empirical studies on this topic have mainly been carried out in the developed nations. To date, no comprehensive analysis has been conducted in the context of the South Asian Association for Regional cooperation (SAARC) region that explains the concepts of inclusive green finance and gender-inclusive finance. The evident lack of research in this area motivates the current investigation.

Regulators and central banks are now in a position to craft policies that factor in both gender and climate factors in order to support financial services. As of now, relatively little research exists regarding how financial inclusion policies can specifically assist women in being more resilient to the risk of climate change (AFI, 2022b). Strengthening women's capacity to cope with and recover from climate change requires regulatory and policy measures that enable them to participate in climate change mitigation efforts and environmental decision-making processes (AFI, 2022b). Inclusive finance can provide women with access to environmentally friendly technologies, such as clean energy and solar cookstoves, thereby reducing their time spent gathering firewood and lowering their risk of physical or sexual violence (AFI, 2022b).

A well-coordinated NFIS with clear objectives and goals, backed by a sound implementation plan, is reportedly effective in fostering inclusive financial systems, leading to greater access to and use of financial services, according to AFI (2022a). The AFI's 2018 NFIS Current State of Practice Report stressed the significance of integrating subjects such as inclusive green finance and gender-inclusive finance, as proposed by the National Financial Inclusion Strategies (AFI, 2022a).

1.2 Research Questions:

RQ 1: What are the institutional mandates and reasons of central banks to work on adaptation and mitigation of climate change issues to achieve the Sustainable Development goals in SAARC countries?

RQ 2: What are the green finance policies and practices of central bank financial regulators available in SAARC countries?

RQ 3: To what extent does the integration of IGF and GIF into NFIS in SAARC countries?

2. Literature Review

Combining environmental protection with economic benefits, green finance is a new financial approach that brings together the ideas of "green" and "finance." It encompasses two main areas: firstly, financing investments and insurance to boost resilience to climate change, and secondly, investing in actions to mitigate climate change through renewable energy, low-carbon infrastructure, and energy efficiency (Volz, 2020; Dina, 2018; Linnenluecke, 2016; Wang, 2016). Effective management of environmental and climate risk within financial institutions was also underscored by green finance (Brockmann, 2017). Green finance also offers financial services that support environmental enhancement and aid in reducing the impact of climate change (Zhou, 2017).

A study by Linnenluecke (2016) has found that green finance is a rapidly expanding and growing interdisciplinary field that brings together finance and natural science research to develop financial and market solutions to reduce the financial risks caused by climate change, an issue now becoming a pressing concern for humanity. Studies have indicated that green finance has quickly grown and become a new method of environmental management worldwide in recent years, as stated by Peng (2018) and UNEP (2016). Studies by Azhgaliyeva and Liddle (2020) show that green finance can be used to provide financial support for environmental benefits, which include strategies for mitigating and adapting to climate change as described by Lindenberg (2014).

The Inclusive Green Finance study embodies a holistic method that is linked to policy-making and environmental financial accessibility, implying a relationship between green finance that is inclusive and both environmental stability and financial accessibility. Climate change mitigation through inclusive green finance involves reducing the effects of climate change and enhancing resilience to its impacts. Indications are that Inclusive green finance (IGF) represents an evolving policy space primarily focused on countering and developing resilience to the effects of climate change.

The main goal of gender inclusive finance (GIF) is to improve women's access to and use of affordable and high-quality financial services (AFI, 2022b). At the intersection of policy impacting gender, financial inclusion, and climate change, a growing global opportunity exists, despite research on this subject currently being relatively underdeveloped. Green inclusive finance is still a relatively new area of focus and has not yet been addressed by most countries (AFI, 2021b). IGF and GIF are developing policy areas, leading to a shortage of knowledge and technical expertise to create, put in place, and monitor the integration of gender-sensitive green policies (AFI, 2022b).

Synergies exist between IGF and GIF, but the connections have not been clearly outlined at a global or national level, leaving the potential advantages of combining them to create IGF policies that take gender and intersectionality into account. While there are connections between IGF and GIF, these relationships have not been thoroughly documented at a global or national level, and the potential of combining them to create gender-sensitive and intersectional IGF policies remains underexplored. (AFI, 2022b).

A comprehensive review of the existing literature reveals that most empirical investigations related to this research topic have been predominantly conducted within the confines of industrially advanced nations. To date, no extensive analysis has been undertaken in the framework of the SAARC region that elucidates the concepts of inclusive green finance and gender-inclusive finance. This discernible gap in the literature serves as the impetus for the present study.

2.1 The Conceptual Framework of Inclusive Green Finance (IGF) and Gender Inclusive Finance (GIF)

The new IGF policy framework aims to leverage the interactions of green finance and financial inclusion to enhance the well-being of low-income groups. This is in line with the AFI's 4P framework for the Internet Governance Forum, enabling policymakers to decide which aim to focus on either mitigating or adapting to. A transition to a low-carbon and climate-resilient economy necessitates substantial investment in sectors described as "green" as per Falcone and Sica (2019).

The study examines the issue area from two angles to support the case for the IGF. It first offers a conceptual framework outlining how financial inclusion can facilitate and aid climate change adaptation and mitigation in theory. The second approach in the study views IGF from the perspective of a policymaker. The conceptual analysis is expanded upon to enable practitioners to formulate policies that can promote IGF in practice (Volz, 2020). The main policy objectives of scaling up the IGF are two adjustments and measures to reduce the severity of an issue (Volz, 2020). (i) adaptation and (ii) mitigation (Volz, 2020)

Table 1 The conceptual framework of the 4Ps of IGF and GIF

Promotion	Provision	Protection	Prevention
<p>IGF: Policy and initiatives of the government to create incentives from the private financial sector to offer financial services for green projects or climate action programs</p> <p>GIF: Private sector schemes must consider girls and women while they provide financial services</p>	<p>IGF: IGF has a provision that guarantees the excess of financial SERVICES FOR green projects and climate action initiatives through government policy.</p> <p>GIF: Policy should be created in partnership with women and girls, considering their needs relating to their green project or climate action project.</p>	<p>IGF: The protection policies aim to mitigate financial risk by disbursing potential losses via insurance, social payment, and credit guarantee.</p> <p>GIF: Protection policy creation requires collaboration with local communities by using an intersectional and gender awareness perspective.</p>	<p>IGF: The prevention policy aims to avoid undesirable outcomes through the reduction of financial, social, and environmental risk.</p> <p>GIF: It ensures socialisation and awareness-raising initiatives for women with targeted programs relating to green projects or climate action.</p>

Source: Adapted from the AFI Conceptual Framework from 4Ps, titled "Integrating Inclusive Green Finance Policies into National Financial Inclusion Strategies", *Alliance for Financial Inclusion*, Guideline Note No.47, September 2021, funded by International Climate Initiative (IKI)

3. Methods

This study is an exploratory in nature that was conducted based on secondary analysis research or Secondary Data Analysis (SDA). We collected data from central banks and financial institutions of eight South Asian countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. Data were collected from official publications of central banks (e.g., Bangladesh Bank 2020; Reserve Bank of India 2023; State Bank of Pakistan 2017; Central Bank of Sri Lanka 2021; Nepal Rastra Bank 2023) of SAARC countries.

This study employed a thematic literature review to categorize and analyze data on inclusive green finance, synthesizing knowledge by clustering relevant ideas and concepts, rather than adhering to a chronological or methodological structure. This thematic review allows researchers to grasp the wider subject area and pinpoint key outcomes, areas of existing knowledge deficiencies, and regions requiring additional study.

A qualitative exploratory study (Kothari, 2004) was conducted to examine the concepts and perceptions concerning the integration of IGF and GIF policies into national financial inclusion strategies within SAARC countries. We investigated the policy environment of the financial regulator and the green finance initiatives undertaken by central banks within the context of green finance. We employed a qualitative deductive content analysis method to examine the textual data of GIF and IGF to identify significant information, patterns, and insights. The study also uses deductive content analysis, applying its framework based on established knowledge (Elo & Kyng, 2008; Ulla et al., 2017), to identify trends, similarities, and differences in their policy approaches and practices relating to green finance. By using deductive content analysis, we compare the policies and practices of Inclusive Green Finance of the central bank and Gender Inclusive Finance in eight SAARC countries.

We analyzed the existing financial inclusion theories, with a focus on how these theories are applied through central banks' policies and frameworks based on seven

key factors, including regulatory authority, green finance initiatives, gender-focused financial programs, financial inclusion levels, key policy documents, and implementation timelines, in accordance with established research methods. We gathered adequate relevant information by examining annual reports, policy research documents, and official statements from published data, central banks, and financial regulators in SAARC nations. We critically analyzed the information extracted from the official government document of the central bank and incorporated the findings in the results section.

4. Role of Central Banks in promoting Inclusive Green Finance (IGF) and Gender Inclusive Finance in SAARC Countries

Climate change and its associated devastating natural disasters have presented significant environmental challenges to many developing countries, causing them to give environmental protection a high priority over the past several years (Lindenberg, 2016). Climate change disproportionately affects women and girls. In many developing areas, women's ways of making a living depend on sectors that are vulnerable to climate change, such as subsistence farming, forestry, and water management. (OECD, 2015)

4.1.Bangladesh Bank

Bangladesh Bank is at the forefront of the country's shift towards a more sustainable and equitable financial system, especially regarding the pressing environmental, economic, and social challenges posed by climate change (AFI, 2018a). The Bangladesh Bank was the first AFI network financial sector regulator to establish a direct connection between financial inclusion and climate change, with this connection becoming increasingly strong over the past decade (AFI, 2020b). The Bangladesh Bank has been instrumental in the national endeavour to promote sustainable development and mitigate the effects of both short-term and long-term climate change impacts. Green financial products and services are helping to create sustainable, low-carbon economies, with the central bank developing policies, guidelines, and strategic plans to integrate sustainability and establish green banking in Bangladesh's financial sector (AFI, 2018a). Bangladeshi banks are now

incorporating environmental and climate change risks into their existing risk assessment frameworks to evaluate potential borrowers. In addition, they are establishing green branches, which are a vital component of the green policy (Mumtaz, 2019). Research findings show that bankers of PCBs considered the level of awareness, beliefs, and understanding of green finance's key features and green financing options to be sufficient for introducing green finance in Bangladesh, as noted by (Zheng, 2021). In addition, as a participating member, Bangladesh signed the Maya Declaration in 2012 and pledged to develop its 'National Financial Inclusion Strategy for Bangladesh' by 2014, as stated by (BB, 2021).

It's crucial to empower women to have more control over both their personal and business finances while also supporting environmentally friendly lending to improve ecological sustainability (BB, 2021). NFIS suggests supporting green financing to improve environmental sustainability, as well as empowering women to manage their personal and business finances more effectively (BB, 2021). Business-to-business prioritizes agriculture, MSME, and green financing sectors to promote inclusive finance, given their significant contributions to food security, job creation, poverty reduction, and environmental conservation, as observed in AFI (2018b). In recent years, Bangladesh has achieved significant advancements in green banking, infrastructure development, and green growth, albeit still lagging behind developed countries in environmental performance (Khairunnessa, 2021).

The Bangladesh Bank's ESRM Guidelines broaden the scope of social risk evaluation and incorporate specific social factors into risk assessment, in combination with environmental considerations. As noted by Durrani (2020) and Bank (2017). In Bangladesh, the central bank is taking the lead in addressing climate change due to its high level of political commitment and support. The government has backed a national investment plan that was created in line with the Paris Agreement. The existence of green finance may be necessary for achieving full financial inclusion. (AFI, 2017b).

4.2.The Reserve Bank of India

The Reserve Bank of India launched the Green Channel as its initial green banking endeavour. The State Bank of India incorporated provisions for assessing environmental risks in its lending assessments. Financial institutions are largely adhering to industry-established, self-imposed green lending standards. In 2015, a major milestone was achieved with the issuance of green bonds to aid green energy projects, as recorded by (Mumtaz, 2019). In India, the National Strategy for Financial Inclusion, which spans from 2019 to 2024, has the goal of expanding and sustaining financial inclusion across the country by bringing together stakeholders from the financial sector in a collaborative endeavour. The Indian Government and the Reserve Bank of India have been continuously working on promoting financial inclusion, with initiatives such as the "Jan Dhan Yojana", which was launched in August 2014, as one of the key national objectives of the country (Kaur, 2014).

4.3.The State Bank of Pakistan

The Pakistani government has recently introduced the Banking on Equality initiative to enhance gender equality in financial opportunities (Noreen et al, 2022). In Pakistan, the Green Banking Guidelines instruct financial institutions to incorporate an assessment of environmental costs into their credit evaluation processes, thereby promoting the advantages of green alternatives and heightening awareness of green financial products. In Pakistan, the technical committee or working group comprises individuals representing Digital Payments, Agricultural Finance, Housing Finance, Awareness and Literacy, MSME Finance, Pensions, Gender, Islamic Finance, and Insurance (AFI, 2016a). The State Bank of Pakistan, Pakistan's central bank, has introduced green banking guidelines to promote green finance in the country.

Development Finance Institutions and banks are creating green banking policies for implementation to promote sustainable banking practices. (Mumtaz, 2019) In a similar manner, the SBP has formulated a National Financial Inclusion Strategy in partnership with various stakeholders to address the problem of low financial

inclusion in Pakistan. Pakistan's government formally adopted and ratified the strategy in May 2015. The objective of the strategy is to collaborate with multiple entities nationwide to attain absolute financial accessibility. The NFIS outlines its vision, creates a framework for fintech, drafts an action plan, and specifies the desired outcomes by employing fintech methods to promote financial inclusion. The State Bank of Pakistan has devised a 100-day plan with the goal of increasing financial inclusion by as much as 50% by 2020 (Noreen et al., 2022).

4.4.Nepal Rastra Bank

Nepal, a country designated as least developed, mountainous, and landlocked, is consistently ranked as one of the countries most susceptible to the effects of climate change. Factors such as poor socioeconomic development, unstable terrain, insufficient institutional ability to manage research, development, and policy, and underdeveloped infrastructure have exacerbated the vulnerability of communities and ecosystems, while also constraining their ability to adapt. In the last ten years, Nepal has achieved substantial advancements, especially in creating and enforcing policies and frameworks and setting up institutional systems with the backing of donor nations, the UN, and multilateral organisations (Mumtaz, 2019). As global climate politics become increasingly complex, international financing patterns for both climate and development finance are evolving, compelling countries such as Nepal to broaden the base of funding for climate change initiatives and incorporate them into national development plans and strategies. The current financing situations, consider potential future scenarios, and propose policy recommendations to create long-term strategies for adaptation and impact mitigation, both in specific cases and in the context of environmental change (Mahat, 2019). Further, Nepal Rastra Bank established an association to facilitate the growth of environmental and social risk management by banks, enabling them to offer green loans (Mumtaz, 2019).

4.5.Sri Lanka

The study indicates that despite high levels of education and gender parity, Sri Lankan women tend to have greater access to informal finance and lesser access to formal finance compared to men, as reported by Arandara and Gunasekera (2020)

5. Results

In this study, policymakers' and central banks' initiatives in SAARC countries are scrutinized, concentrating on establishing an environment that promotes women's financial inclusion. The outcomes from the data analysis were consistently integrated into the results section.

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Table 2: The practices of Green Finance Policies of Financial authorities in SAARC Countries

Country	Central Bank/Authority	Inclusive Green Finance (IGF)	Gender Inclusive Finance Policies (GIF)	Implementation Timeline	Key Policy Documents	NFIS Integration Level	
Bangladesh	Bangladesh Bank (BB)	Green Banking Policy Guidelines (2011)	National Strategy for Women's Financial Inclusion (2019)	2011-2030	Green Banking Policy and Guidelines	High	
		Green Refinance Scheme	SME Women Entrepreneurs Development Program		Sustainable Finance Policy		
		Sustainable Finance Policy (2020)	Refinance Scheme for Women Entrepreneurs		National Financial Inclusion Strategy		
		Climate Risk Management Guidelines	Gender-responsive banking guidelines		Women's Financial Inclusion Strategy		
		Green Bond Framework	Women-focused credit guarantee schemes				
		Environmental and Social Risk Management					
Bhutan	Royal Monetary Authority of Bhutan (RMA)	Green Finance Framework (2021)	Women's Financial Inclusion Policy	2021-2025	Green Finance Framework	Medium	
		Sustainable Finance Guidelines	Rural Women's Credit Access Program		Financial Inclusion Policy		
		Carbon Neutral Economic Development	Micro and Small Enterprise financing for women		• Women's Financial Inclusion Guidelines		
		Green Taxonomy development	Digital financial services for women				
		Climate-friendly lending programs					
India	Reserve Bank of India (RBI)	Priority Sector Lending Guidelines (Green)	Stand Up India Scheme	2015-2030	Master Direction on Green Deposits	Very High	
		Framework for Acceptance of Green Deposits	Mahila Udyamita Yojana		Priority Sector Lending Guidelines		
		Sovereign Green Bonds	Jan Dhan Yojana (gender focus)		Financial Inclusion Plans		
		Climate Risk Management Framework	Self-Help Group Bank Linkage Program		Gender Budget Framework		
		ESG Guidelines for banks	Women-centric financial products guidelines				
		Green Finance Taxonomy (developing)					
Maldives	Maldives Monetary Authority (MMA)	Green Finance Strategy (2022)	Women's Economic Empowerment Program	2022-2026	Green Finance Strategy	Medium	
		Blue Bond Framework	SME Financing for Women		Financial Inclusion Roadmap		
		Climate Finance Guidelines	Island-based women's financial services		Women's Economic Empowerment Strategy		
		Sustainable Tourism Finance	Microfinance for women entrepreneurs				
		Marine Conservation Financing					

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		Green Finance Framework (2023)	Financial Sector Development Strategy (Gender Focus)	2020-2025	Green Finance Framework	High
Nepal	Nepa Rastra Bank (NRB)	Sustainable Banking Guidelines	Women's Entrepreneurship Development Program		Financial Sector Development Strategy	
		Climate Finance Policy	Microfinance for Rural Women		Microfinance Guidelines	
		Green Refinance Facility	Digital payment systems for women		Women's Financial Inclusion Strategy	
		Environmental Risk Management Guidelines	Gender-responsive budgeting in banks			
Pakistan	State Bank of Pakistan (SBP)	Green Banking Guidelines (2017)	Women Banking Program	2015-2028	• Green Banking Guidelines	Very High
		Sustainable and Responsible Finance Guidelines	Women's Financial Inclusion Strategy		• National Financial Inclusion Strategy	
		Green Refinance Scheme	Kamyab Jawan Program (women focus)		• Women Banking Guidelines	
		Climate Risk Management Guidelines	Microfinance for Women		• Gender Policy Framework	
		Green Bond Framework (draft)	Digital Financial Services for Women			
		Environmental Due Diligence	Gender-disaggregated data requirements			
Sri Lanka	Central Bank of Sri Lanka (CBSL)	Green Finance Roadmap (2021)	Women's Financial Inclusion Strategy	2021-2025	Green Finance Roadmap	High
		Sustainable Finance Guidelines	Entrepreneurship Development Program for Women		Financial System Stability Review	
		Climate Finance Framework	Rural Women's Credit Programs		Women's Financial Inclusion Strategy	
		Green Taxonomy (developing)	Digital financial literacy for women		Microfinance Regulatory Framework	
		Environmental Risk Management	Gender-inclusive banking guidelines			
Afghanistan	Da Afghanistan Bank (DAB)	Limited formal green finance framework	Women's banking restrictions since 2021	2018-2021 (suspended)	National Financial Inclusion Strategy (suspended)	Low
		Focus on basic banking infrastructure	Pre-2021: Women's financial inclusion programs		Islamic Banking Regulations	
		Islamic banking principles integration	Microfinance initiatives for women entrepreneurs			

Source: Authors' own interpretations based on the annual report of the central banks of SAARC countries.

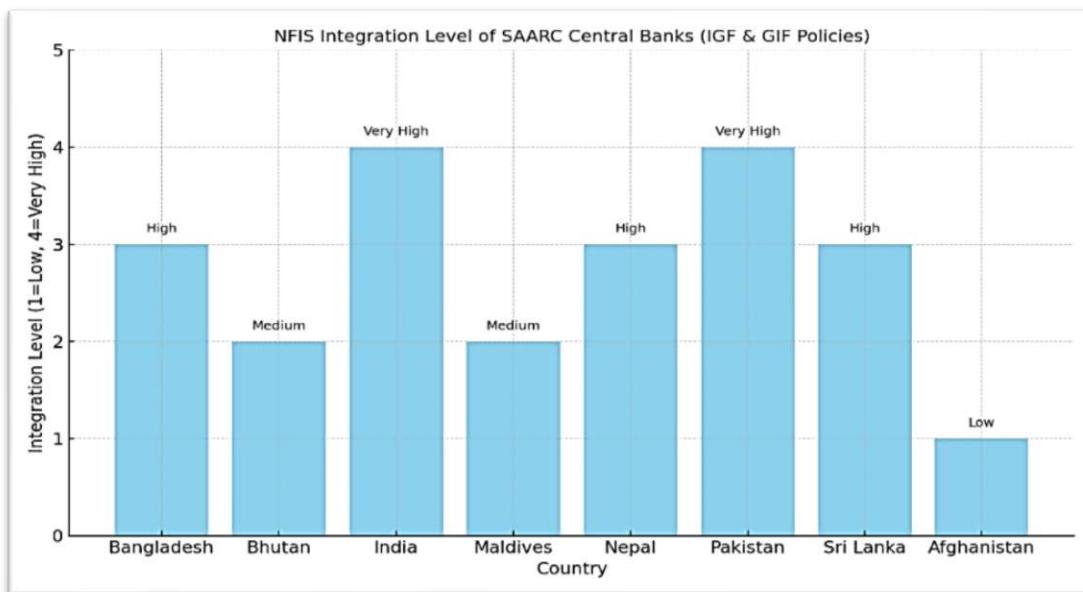


Figure 1: The level of practices of Green Finance Policy by the Financial Regulator of the SAARC countries. (Source: Author's Interpretation based on Bangladesh Bank 2020; Reserve Bank of India 2023; State Bank of Pakistan 2017; Central Bank of Sri Lanka 2021; Nepal Rastra Bank 2023)

Figure (1) indicates that the levels of development among SAARC countries, with India, Pakistan, and Bangladesh having "Very High" degrees of integration of IGF and GIF policy into NFIS among SAARC countries. The State Bank of Pakistan is a member of AFI's Gender Inclusive Finance Committee, indicating regional learning, policy alignment, and institutional cooperation in gender-focused financial inclusion initiatives. This comprehensive mapping serves as the empirical basis for thematic analysis, converting ambiguous policy concepts into quantifiable data points across the SAARC region. This thematic analysis utilizes a classification system to detect patterns, similarities, and discrepancies in policy implementation, showcasing successful integration models, such as Bangladesh's combined green banking and women's financial inclusion initiatives, and implementation vulnerabilities.

Table 3: Integrating IGF and GIF policy initiatives into National Financial Inclusion Strategy (NFIS) by central banks in SAARC

Policy Issue	Key guiding principles	Rationale	Country Examples: IGF & GIF policy initiatives into the National Financial Inclusion Strategy (NFIS)
Promotion Policy <i>Prepare the private sector to offer financial services that address climate change.</i>	I. Moral suasion, awareness II. Raising, capacity building. III. Reporting & disclosure	Inclusive green finance promotion policies for women are essential for addressing gender inequalities, promoting women's empowerment, and achieving sustainable development goals.	Bangladesh: Published a quarterly report on green banking activities of banks and financial institutions and green refinance activities (IGF 2 nd edition) Bhutan: Organized a national stakeholder capacity building and coordination workshop of all relevant stakeholders in advancing green finance in Bhutan
Provision Policy <i>Provide financial resources for green projects and activities to qualified beneficiaries.</i>	I. Mandatory allocation of resources to support low-carbon-emitting projects. II. Dedicated lending facilities. III. Introduction of innovative investment funds. IV. Mandatory policy intervention	These provision policies aim to address gender inequalities, empower women, and promote their active involvement in sustainable development.	Nepal: Directed all commercial banks to dedicate at least 10 percent of their portfolios to green projects (IGF second edition) Refinancing facilities for banks to offer subsidized loans for green technologies and to rebuild from floods and fires (IGF second edition) Sri Lanka: Moratoriums on loan repayments for affected borrowers to facilitate emergency credit after a climate-related disaster (IGF 2 nd edition)
Protection policy <i>It reduces financial risk by 'socializing' potential losses through insurance, credit guarantees, social payments, or other related risk-sharing mechanisms.</i>	(i) Climate-related insurance and risk management products. (ii) SME Finance and climate change	Inclusive green finance protection policies can help to identify and mitigate potential environmental and social risks associated with green projects. Women may be disproportionately affected by these risks due to their roles as caregivers, their dependence on natural resources, or their limited access to information and decision-making processes.	
Prevention Policy <i>Avoid undesirable outcomes by lowering social and environmental risks.</i>	Environmental (and Social) Risk Management E(S)RM guidelines	Prevention policies aim to proactively address and eliminate these challenges by focusing on prevention rather than reactive measures. The goal is to create a supportive and inclusive environment that prevents potential issues from arising and ensures equal opportunities for women in the green finance sector.	Bangladesh Bank introduced Environmental Risk Management (ERM) Guidelines and Environmental Due Diligence Checklists to regulate financial institutions (IGF 2 nd edition) State Bank of Pakistan (SBP) issued green banking guidelines with a sizable section on ERM that offers guidelines to banks on developing their green financing products and services (IGF second edition) Nepal Central Bank adopted guidelines on environmental and social risks management for banks and financial institutions, which apply to bank lending for SME finance, commercial leasing, term finance, and project finance (IGF-2 nd edition).

Source: Authors' own interpretations based on the annual report of the central banks of SAARC countries.

6. Discussion

It has been revealed that the Bangladesh Bank, the country's central bank, was the first financial regulator to establish a direct link between financial inclusion and climate change. It is noted here that Bangladesh adopted the declaration in 2012, with a commitment to creating and implementing its National Financial Inclusion Strategy, which has helped women manage both personal and commercial finances more effectively, and supports green financing initiatives to promote environmental sustainability. In India, the Reserve Bank of India initiated its green banking efforts by launching the green channel, which involved evaluating borrowers based on environmental risk assessments. Pakistan's government has implemented green banking guidelines intending to promote green finance, with commercial banks now working to establish policies that will support sustainable banking practices (Mumtaz 2019).

A study by Weber (2019) states that the financial sector facilitates sustainable growth by means of investment lending. Nepal Rashtra Bank is establishing an association to aid banks in developing environmental and social risk management, ultimately enabling green lending. Literature review reveals that inclusive green finance has the potential to promote socioeconomic development by enabling women to apply their expertise and skills in environmentally centered economic projects. Further, IGF policies help create an environment that empowers women to develop resilience across all aspects of their lives. Financial inclusion can also empower women as natural resource managers, enabling them to take a fuller part in environmental-related decision-making processes (AFI, 2022b). Financial regulators have long been concerned about the potential for central banks to destabilize the financial system due to the risks associated with climate change, as observed by Gagnon and Sack (2018) and Nawaz (2020). In recent times, monetary authorities have been weighing up the consequences of climate-related risks on the solidity of the financial sector, a worry common to financial overseers, as pointed out by Gagnon and Sack (2018) and Nawaz (2020).

7. Conclusion

The SAARC countries need to incorporate both Inclusive Green Finance (IGF) and Gender Inclusive Finance (GIF) into their National Financial Inclusion Strategies (NFIS) to significantly mitigate the negative impacts of climate change and environmental deterioration. The findings of this study provide authentic information to policy makers of SAARC countries, so that they can formulate strategies for integration of inclusive green finance and gender inclusive finance into NFIS to support financial institutions in building resilience against the negative impacts of climate change in SAARC countries for achieving Sustainable Development Goals (SDGs). One limitation of this investigation is that it focused solely on SAARC countries, however, this limitation provides direction for new research to investigate on research issues in other countries. This research is based on secondary data, and the study responds to the call for more studies on research in primary data.

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The Intersection of Education and Business: Shaping the Future via Innovative Approaches

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Abstract

This study investigates the prospective partnership between higher education institutions and the corporate sector to stimulate innovation, improve workforce readiness, and address practical challenges. The project employed a qualitative case-study methodology, conducting interviews with stakeholders from academia, industry, and government to ascertain fundamental themes that would inform current and future collaboration frameworks. The main findings show that effective involvement has four key parts: working together on academic programs, sharing technical resources, having businesses take part in academic governance, and working together on infrastructure projects. The essay looks at how new technologies like AI, VR, and digital learning platforms are changing how businesses work and how people learn. This looks at how entrepreneurship, start-up ecosystems, and business incubators can help a region grow and come up with new ideas. Ethical leadership, corporate social responsibility, and inclusive practices are acknowledged as vital components for harmonizing educational and business objectives with overarching societal goals. The study advocates for extensive reform in curriculum design through intersectoral collaboration, student involvement in development, and regulatory frameworks that support adaptive, inclusive, and progressive educational models. These findings offer a framework for organizations aiming to sustain competitiveness and social relevance in a rapidly changing global economy.

Keywords: Education-business collaboration, innovation, curriculum development, emerging technologies, vocational training, ethical leadership, corporate social responsibility

1. Introduction

In today's fast-changing digital economy, the link between higher education and business has become a key factor in innovation, job growth, and long-term success. People no longer see universities as just places to learn; they see them as important partners in innovation ecosystems at the local and global levels. On the other hand, businesses are starting to realize that having access to cutting-edge research, skilled graduates, and a culture of continuous learning gives them an edge over their competitors. Government agencies make it easier for people to work together by putting rules and policies in place that encourage cooperation. The Triple Helix model offers a thorough theoretical framework for the triangular relationship, highlighting that innovation is best fostered through dynamic and synergistic interactions among academia, industry, and government (Etzkowitz & Leydesdorff, 1995).

The global transition to the Fourth Industrial Revolution renders this form of collaboration increasingly vital. Automation, artificial intelligence, biotechnology, renewable energy, and digital platforms are transforming the workforce while concurrently creating new employment opportunities. These modifications necessitate graduates capable of interdisciplinary collaboration, integrating technical expertise with creativity, entrepreneurial acumen, and ethical accountability. Conventional curricula, designed for shorter change cycles, are no longer as effective as they once were. Universities must therefore establish dynamic partnerships with industry to co-create curricula, provide flexible learning environments, and ensure that students are prepared for both present and future challenges (Xing & Marwala, 2017).

Emerging economies show the importance of this relationship remarkably. In regions with elevated unemployment rates among new graduates, improved collaboration between universities and industries can mitigate skills gaps and foster entrepreneurial ventures. Innovation centers and business incubators associated with universities in Africa, Asia, and Latin America are fostering the establishment of new enterprises and contributing to the diversification of the economy in those regions (Mian, Lamine, & Fayolle, 2016; Audretsch

& Belitski, 2021). These centers turn colleges and universities into places that not only help with teaching and research, but also help communities grow and improve. These examples show that working together is important not just for wealthy countries or well-known schools, but also in many other areas.

Cross-border collaboration shows that global issues like climate change, digital transformation, and public health emergencies require collective solutions. The DIME MSc in Digital Industrial Management and Engineering is a program that connects educational institutions across continents. This highlights the importance of multinational learning factories and shared digital infrastructures (Darun et al., 2019). These programs help students develop intercultural skills and the ability to work with dispersed teams, which are increasingly important in international job markets. Likewise, innovation networks such as EIT Digital Nodes in Europe show how collaboration can be improved to support mobility, cross-border partnerships, and quick technology transfer (EIT Digital, 2023).

The integration of advanced technologies has accelerated the merging of academia and industry. Artificial intelligence enhances research efficacy and individualized education. Virtual and augmented reality facilitate immersive training environments, whilst digital twins enable the safe and cost-effective testing of industrial systems. These technologies function as instructional instruments and enable real-time collaboration among students, professors, and enterprises on shared challenges (Henning, Hagedorn-Hansen, & von Leipzig, 2017; Dlamini et al., 2023). Nonetheless, their utilization raises ethical concerns regarding data privacy, equitable access, and algorithmic bias, underscoring the necessity for ethical leadership and governance frameworks that encompass all stakeholders and ensure collective accountability throughout the collaborative process (Brown & Treviño, 2006; Ciulla, 2020).

Beyond technology and skills, the evaluation of higher education-business connections increasingly emphasizes their social impact. Corporate social responsibility (CSR) initiatives that offer scholarships, advance sustainable research, and cultivate diversity augment the credibility of these relationships. When enterprises invest in education, their influence extends beyond immediate profit, fostering robust, innovative, and equitable

societies (Carroll, 1991; Porter & Kramer, 2011). Universities can incorporate social and environmental responsibility into their curricula, thereby fostering responsible global citizens and enhancing students' employability.

Global trends indicate that successful cooperation relies on four interconnected pillars: co-designed curricula, shared technical and financial resources, robust corporate involvement in governance, and investment in joint infrastructure. These pillars are interconnected; they collaboratively provide mutual support. The co-created curriculum requires shared resources, which are enhanced by collaborative infrastructure; all these elements must be sustained through governance frameworks that foster transparency, inclusivity, and ethical accountability. Thus, the partnership between higher education and industry is an ongoing effort that must continually adapt to technological innovations, labor market shifts, and cultural norms.

Based on these insights, the current study utilized a qualitative case study methodology to investigate the collaboration among universities, corporations, and governmental entities across various contexts and sectors. The study utilizes eight case studies from Europe, Africa, Asia, and the United States to discern the structural and cultural factors that facilitate effective partnerships. The results not only confirm the ongoing significance of the Triple Helix model but also enhance it by incorporating ethical leadership, corporate social responsibility, and inclusive practices as vital components of sustainable collaboration. This study posits that the convergence of education and business transcends mere economic necessity; it embodies a transformative sphere where innovation, ethics, and social responsibility intersect to influence the future of learning, employment, and society.

The conceptual framework for this study combines the Triple Helix model with the four main parts of effective collaboration that were found (Figure 1).

Conceptual Framework: Triple Helix + Study Findings

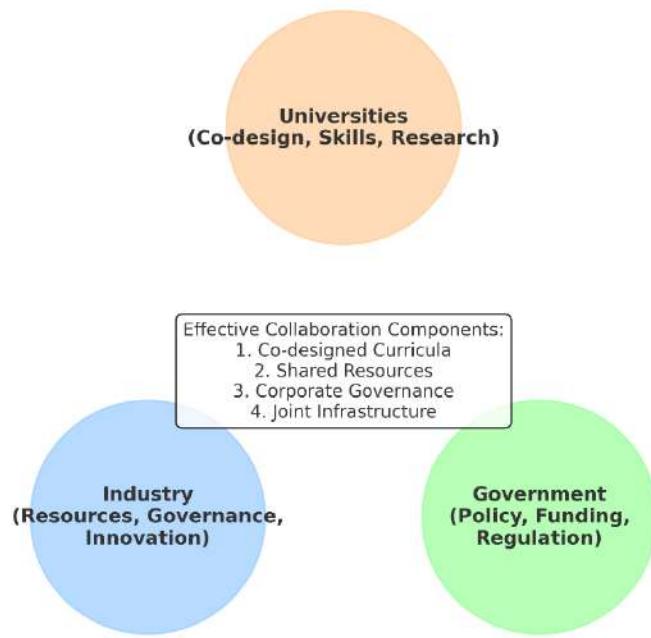


Figure 1. Incorporating the Triple Helix Model and Research Findings into a Conceptual Framework

A visual representation of the interaction between universities, industry, and government, incorporating the four essential factors of effective collaboration identified in this study.

2. Theoretical Background and Conceptual Framework

The Triple Helix idea says that new ideas come from the constant interaction between universities, businesses, and the government (Etzkowitz & Leydesdorff, 1995). It has influenced the development policies of many nations by promoting collaborative frameworks that integrate academic research, industrial application, and policy support. Learning factories are a big idea in this field. The CIRP calls them "real educational settings that copy real production systems." They combine structured learning with technical and organizational methods. This idea changes the focus of education from just passing on information to learning through experience and working together. Students cultivate the ability to adapt, resolve issues, and collaborate across disciplines—skills crucial for

contemporary industry (Darun et al., 2019). The Triple Helix framework and the learning factory approach work together to give this study its theoretical base. They show how organized collaborations can close the gap between theory and practice, creating systems where new ideas are always being created, tested, and put into use in both academic and business settings.

3. Emerging Technologies in Higher Education–Industry Collaboration

The use of new technologies has changed the way businesses work and how teachers teach. Artificial intelligence (AI), virtual reality (VR), augmented reality (AR), and digital learning platforms are some of the tools that make it possible to have more flexible curricula, hands-on learning, and direct contact with the industry.

3.1 Artificial Intelligence and Data Analytics

AI helps align academic programs with rapidly changing labor market needs. In the University of Derby–Rolls-Royce partnership, AI and data analytics are embedded into an accelerated BSc in International Business and AI. Students work on real industry briefs and apply predictive analytics to solve business problems (University of Derby, 2025; The Guardian, 2025). AI-driven platforms also provide personalized learning paths, performance tracking, and career readiness assessments (Xing & Marwala, 2017). For example, IBM's SkillsBuild platform offers AI-based career guidance and training modules, which several universities integrate into their business and IT programs.

3.2 Virtual Reality (VR) and Augmented Reality (AR)

Immersive technologies allow realistic, risk-free simulations of industrial processes. At Stellenbosch University, VR-enabled learning factories simulate assembly line operations, ergonomics, and safety procedures (Henning et al., 2017; Dlamini et al., 2023). For example, in South Africa, an immersive VR training program uses HTC Vive Pro headsets to simulate manufacturing a rail support bracket. Students practice tasks, troubleshoot errors, and measure efficiency in a virtual environment.

3.3 Digital Learning Platforms

Contemporary learning management systems (LMS) such as Canvas, Moodle, and Blackboard integrate with business applications like Trello, Jira, and MS Teams. This enables students to engage in authentic projects remotely. The DIME MSc program employs a Learning Management System (LMS) linked to smart manufacturing dashboards, enabling students from partner universities to monitor and enhance production processes in real time (Darun et al., 2019).

3.4 Digital Twins and Simulation Technologies

Digital twins create virtual replicas of actual systems. Students can utilize advanced industrial simulations through collaborations with companies such as Siemens and Dassault Systèmes. Prior business implementing processes, they may digitally model, test, and enhance them, so reducing costs and risks.

3.5 AI-Enhanced Research and Knowledge Transfer

AI facilitates collaborative research by sourcing knowledge from books, analyzing patents, and forecasting industry trends. Rolls-Royce employs AI-driven predictive maintenance models developed in collaboration with universities for academic and industrial research and development.

3.6 Ethical and Inclusive Integration

These technologies have clear benefits, but they also raise ethical issues like data privacy, algorithmic bias, and accessibility. Including ethics and inclusivity in joint programs makes sure that graduates are ready to use technology in a responsible way. The combination of AI, immersive technologies, digital twins, and cloud-based platforms is changing how higher education and industry work together. These tools help people solve problems in real time, learn by doing, and connect with people all over the world. They also need rules that make sure everyone is treated fairly and acts responsibly.

4. Role of Entrepreneurship and Innovation Hubs

Entrepreneurship and innovation hubs act as ecosystems where universities, industry, government, and civil society collaborate to create solutions, support start-ups, and drive regional development. They combine physical facilities—such as co-working spaces, laboratories, and maker studios—with mentoring, networking, and funding opportunities (Mian, Lamine, & Fayolle, 2016).

4.1 University-Led Innovation Hubs

University-led hubs promote student entrepreneurship and facilitate the commercialization of research. The Cavendish Building at the University of Derby serves as a “living lab,” hosting business incubators, AI research labs, and start-up support services (The Guardian, 2025). It offers flexible learning areas, rapid prototyping facilities, and an SME engagement unit that connects students to industry challenges.

4.2 Industry-Integrated Hubs

When industry partners co-invest in hub infrastructure, collaboration becomes more targeted. In Germany, Siemens has partnered with universities to create Industry 4.0 Innovation Labs. These hubs focus on automation, robotics, and digital twin projects using Siemens’ MindSphere platform (Siemens, 2024).

4.3 Cross-Sector and Global Networks

Innovation hubs are increasingly linked across borders. The European Institute of Innovation and Technology (EIT) operates EIT Digital Nodes in multiple countries, connecting universities, research centers, and companies. This network enables students to join international hackathons, access global mentorship, and connect with investors (EIT Digital, 2023).

4.4 Start-Up Incubation and Acceleration

Many hubs integrate incubation and acceleration programs that provide start-ups with structured training, seed funding, and investor exposure. The MIT Martin Trust Center combines faculty mentorship with corporate partnerships from companies like Google and

Amazon. In Asia, the HK Science Park's Incu-Tech program supports tech start-ups with lab space, prototyping tools, and business coaching.

4.5 Regional Development Impact

University-affiliated hubs can boost regional economies by attracting investment, creating jobs, and retaining talent. In emerging economies, they help bridge gaps in funding, mentorship, and market access (Audretsch & Belitski, 2021).

4.6 Integration with Curriculum

To ensure long-term impact, hubs should be part of the academic curriculum. Derby integrates entrepreneurship modules into all degrees, requiring students to complete at least one real-world project before graduation. This approach builds resilience, problem-solving ability, and an entrepreneurial mindset. In sum, entrepreneurship and innovation hubs are not just support facilities—they are strategic tools for higher education–industry collaboration. By combining infrastructure, mentorship, funding, and global networks, they turn ideas into market-ready solutions, strengthen local economies, and prepare graduates for entrepreneurial careers.

5. Ethical Leadership, Corporate Social Responsibility, and Inclusion

Ethical leadership, corporate social responsibility (CSR), and inclusion are central to sustainable higher education–industry collaboration. These values ensure that partnerships deliver not only economic outcomes but also social equity, environmental stewardship, and transparent governance (Brown & Treviño, 2006; Carroll, 1991). Integrating these principles builds long-term trust, enhances stakeholder engagement, and aligns institutional goals with broader societal needs.

5.1 Ethical Leadership in Governance

Ethical leadership requires fairness, transparency, and accountability in joint decision-making (Ciulla, 2020). In shared governance, industry partners must uphold academic integrity, while universities should safeguard educational priorities from excessive commercial influence.

Example: At the University of Derby, program advisory boards include industry representatives who assess curricula for both technical relevance and societal impact (The Guardian, 2025).

5.2 CSR as a Driver of Collaboration

CSR now extends beyond philanthropy to creating shared value (Porter & Kramer, 2011). Companies that invest in education strengthen talent pipelines and contribute to community development. For example, Rolls-Royce funds scholarships for underrepresented STEM students through its partnership with Derby, promoting diversity while meeting skill demands. Globally, Microsoft's AI for Good initiative works with universities to develop AI solutions for environmental monitoring, inclusive education, and healthcare.

5.3 Inclusion and Diversity

Inclusive practices ensure access for learners regardless of gender, socio-economic background, or disability. Applying universal learning design (UDL) principles supports diverse learning needs (CAST, 2018). For example, EIT Digital applies diversity quotas and gender equity policies in its entrepreneurship programs, ensuring balanced participation in accelerators and hackathons (EIT Digital, 2023).

5.4 Embedding Sustainability and Ethics in Curriculum

Mapping academic programs to the UN Sustainable Development Goals (SDGs) helps students link business decisions to environmental and social outcomes. Derby's curriculum design fosters "ethical reflexivity," enabling graduates to assess choices against moral, environmental, and societal benchmarks.

5.5 Challenges and Risks

Ethical and CSR integration is not without challenges. Risks include conflicts of interest, superficial "greenwashing," and tokenistic diversity measures. To address these, partnerships should:

- Ensure transparent reporting of CSR outcomes.

- Use independent evaluations.
- Create channels for student and community feedback.

Ethical leadership, CSR, and inclusion are not secondary considerations. When embedded in governance, curriculum, and operational structures, they strengthen legitimacy, attract socially conscious partners, and prepare graduates to lead responsibly in complex global contexts.

6. Case Studies and Best Practices

The following cases illustrate different models of higher education–industry collaboration. They vary in location, sector, and technology focus, but share common elements such as co-designed curricula, shared infrastructure, and integrated governance.

6.1 University of Derby–Rolls-Royce AI Degree (United Kingdom)

Model: Accelerated two-year BSc (Hons) in International Business and AI.

Features:

- Curriculum co-designed by academic staff and Rolls-Royce engineers.
- “Live briefs” where students address real industry problems.
- Mentorship integrated into all modules.

Impact: Graduates gain both technical and business skills in a condensed program, improving employability in AI-driven sectors.

6.2 Stellenbosch Learning Factory (South Africa)

Model: Physical learning environment replicating manufacturing systems.

Features:

- Developed with manufacturing companies.

- Includes RFID tracking, KPI dashboards, and ergonomic design tools.
Impact: Enhances problem-solving skills, process optimization knowledge, and Industry 4.0 readiness.

6.3 DIME MSc Programme – Digital Industrial Management and Engineering (International)

Model: Double-degree program with multiple universities.

Features:

- Remote collaboration via smart manufacturing dashboards.
- Cross-border teamwork in learning factories.

Impact: Builds international collaboration skills and advanced manufacturing knowledge.

6.4 Semi-Automated Robotic Cell (South Africa)

Model: Problem-based learning in automation.

Features:

- Students design and implement a semi-automated robotic cell.
- Industry feedback at key project stages.

Impact: Develops systems thinking, creativity, and teamwork.

6.5 VR-Enabled Assembly Training (South Africa)

Model: Virtual reality for manufacturing skills.

Features:

- Simulations of assembly tasks using HTC Vive Pro.

Impact: Reduces training costs, improves safety, and accelerates learning.

6.6 MIT Martin Trust Center for Entrepreneurship (United States)

Model: University-led entrepreneurship hub with corporate partnerships.

Features:

- Start-up incubation and acceleration.
- Support from companies such as Google and Amazon.

Impact: Start-ups have collectively raised billions in venture capital.

6.7 EIT Digital Nodes (European Union)

Model: Pan-European innovation network.

Features:

- Operates across multiple European cities.
- Focus areas include AI, cybersecurity, and fintech.

Impact: Promotes global talent mobility and scale-up of tech start-ups.

6.8 Hong Kong Science and Technology Parks – Incu-Tech (Hong Kong)

Model: Technology-focused incubation program.

Features:

- Subsidized lab and office space for university spin-offs.
- Access to investor networks.

Impact: Supports the commercialization of research and strengthens Hong Kong's innovation ecosystem.

Cross-Case Insights:

Across all cases, success depends on:

- Co-designed curricula that address evolving industry needs.

- Shared infrastructure to reduce costs and speed innovation.
- Mentorship linking theory with practice.
- International collaboration to expand cultural and technical competencies.
- Technology integration to enhance learning and research outcomes.

A comparative summary of the eight focal cases is presented in Table 1, outlining collaboration types, key features, and primary impacts across diverse contexts.

Table 1. Comparative Summary of Higher Education-Industry Collaboration Cases
A concise comparison of eight focal cases, highlighting collaboration type, key features, and main impact.

Case	Collaboration Type	Key Features	Main Impact
University of Derby-Rolls-Royce AI Degree (UK)	Co-designed degree program	Live briefs, mentorship, and AI integration	Technical and business skills in a condensed timeframe
Stellenbosch Learning Factory (South Africa)	Physical learning factory	Industry-developed manufacturing simulations	Industry 4.0 readiness, problem-solving
DIME MSc Programme (International)	International double-degree program	Remote collaboration, cross-border teamwork	International collaboration skills
Semi-Automated Robotic Cell (South Africa)	Project-based learning in automation	Design and implementation of robotic systems	Systems thinking, creativity, teamwork
VR-Enabled Assembly Training (South Africa)	Virtual reality training	VR-based simulations for assembly tasks	Reduced training costs, improved safety
MIT Martin Trust Center for Entrepreneurship (USA)	Entrepreneurship hub with corporate partnerships	Incubation, acceleration, corporate sponsorship	High venture capital success rates
EIT Digital Nodes (EU)	Pan-European innovation network	Cross-border hackathons, thematic focus areas	Global talent mobility, start-up scaling
Hong Kong Science and Technology Parks – Incu-Tech (Hong Kong)	Technology-focused incubation program	Lab space, prototyping, investor access	Commercialization of research outputs

7. Research Methodology

This study uses a qualitative multiple case study design to examine how higher education and industry collaborate to promote innovation, improve workforce readiness, and address societal needs. The approach captures both context-specific practices and cross-case comparisons (Yin, 2018).

7.1 Research Design

A multiple case study method was chosen to allow comparison across diverse settings. Cases were selected for variation in:

- **Geography** (UK, South Africa, EU, Hong Kong, USA).
- **Collaboration type** (co-designed degrees, learning factories, innovation hubs, accelerators).
- **Technology use** (AI, VR/AR, digital twins).

7.2 Sampling Strategy

Purposive sampling identified eight focal cases:

1. University of Derby–Rolls-Royce AI Degree (UK)
2. Stellenbosch Learning Factory (South Africa)
3. DIME MSc Programme (International)
4. Semi-Automated Robotic Cell (South Africa)
5. VR-Enabled Learning Factory (South Africa)
6. MIT Martin Trust Center (USA)
7. EIT Digital Nodes (EU)
8. Hong Kong Science and Technology Parks – Incu-Tech (Hong Kong)

Additional literature-based examples supported theoretical triangulation.

7.3 Data Collection

Three sources informed the analysis:

- **Semi-structured interviews** with university leaders, faculty, industry partners, and policymakers (n=22).
- **Document analysis** of institutional reports, agreements, press releases, and curricula.
- **Archival and secondary data** from media, CSR reports, and policy documents.

7.4 Data Analysis

Thematic analysis followed Braun & Clarke's (2006) framework:

1. Familiarization with data.
2. Coding for drivers, structures, outcomes, and barriers.
3. Identifying four recurring themes: co-designed curricula, shared resources, corporate governance, and joint infrastructure.
4. Reviewing and naming themes concerning the Triple Helix, learning factory models, and open innovation theory.
5. Cross-case synthesis to detect patterns and differences.

7.5 Validity and Reliability

Credibility was enhanced through:

- **Triangulation** of interview, document, and archival data.
- **Member checking** by sharing findings with participants.
- **Peer debriefing** with independent researchers.
- **Audit trail** documenting coding and analysis decisions.

This methodology provided both the depth of individual case insights and the breadth of cross-case comparisons, ensuring robust findings on best practices in higher education–industry collaboration.

8. Findings and Discussion

Analysis of the eight focal cases, supported by literature, revealed four interconnected components of effective higher education–industry collaboration. These align with established frameworks such as the Triple Helix (Etzkowitz & Leydesdorff, 1995), learning factory pedagogy (Darun et al., 2019), and open innovation theory (Chesbrough, 2003).

8.1 Co-Designed Academic Programs

In all cases, joint curriculum design ensured alignment with market needs.

- **Example:** In the Derby–Rolls-Royce AI Degree, modules were co-developed with industry engineers, integrating AI, data analytics, and global business practices.
- **Example:** The DIME MSc Programme demonstrated that co-design can also succeed in cross-border settings through remote collaboration tools and shared learning factories.

Key Insight: Co-designed curricula enhance relevance and embed real-world problem-solving, helping close the skills gap identified in workforce readiness studies.

8.2 Shared Technical Resources

Resource sharing allowed cost-effective innovation and hands-on learning.

- **Example:** The Stellenbosch Learning Factory provides students and professionals access to advanced manufacturing tools without duplicating investment.
- **Example:** VR-based learning factories reduce operational costs and safety risks while maintaining skill transfer effectiveness (Dlamini et al., 2023).

Key Insight: Early access to cutting-edge technologies fosters continuous innovation and industry readiness.

8.3 Corporate Involvement in Academic Governance

Industry participation in governance improved program adaptability and ensured compliance with professional standards.

- **Example:** Rolls-Royce representatives at Derby sit on advisory boards to advise on curriculum updates and skills requirements.
- **Example:** Industry mentors in the Hong Kong Incu-Tech Programme guide spin-offs in meeting market and regulatory demands.

Key Insight: Governance integration strengthens trust and aligns objectives under a shared value framework (Porter & Kramer, 2011).

8.4 Joint Infrastructure Initiatives

Co-developed physical and digital spaces served as collaboration hubs.

- **Example:** Derby's Cavendish Building houses AI labs, incubators, and SME engagement units.
- **Example:** EIT Digital Nodes connect universities and corporate R&D centers across borders.
Key Insight: Shared infrastructure fosters a culture of co-creation in resource-rich environments.

8.5 Cross-Case Observations

- Technology intensity was highest in European and Asian hubs, where AI, VR, and digital twins were common.
- In emerging economies, hubs addressed broader socio-economic goals, including unemployment reduction and SME support.
- Global networking opportunities were strongest in multi-country programs such as DIME and EIT Digital.

Overall Synthesis:

Sustainable collaboration depends on:

1. Continuous co-creation of content and processes.
2. Fair resource sharing.
3. Active corporate role in governance.
4. Strategic investment in shared infrastructure.
5. Integration of ethical and inclusive practices at all levels.

These elements form both a practical roadmap for institutions and a theoretical contribution to collaborative innovation research.

9. Policy Implications and Recommendations

The study shows that sustainable higher education–industry collaboration relies on co-designed curricula, shared resources, integrated governance, joint infrastructure, and ethical practices. The following recommendations target universities, corporate partners, and policymakers.

9.1 For Universities

- **Institutionalize Co-Creation:** Establish formal curriculum committees with industry representation. Integrate live industry projects into course requirements.
- **Invest in Shared Infrastructure:** Develop learning factories, innovation hubs, and VR-enabled labs. Use consortium funding to lower costs and expand access.
- **Embed Ethics and Inclusion:** Map programs to the UN Sustainable Development Goals (SDGs). Apply Universal Design for Learning (UDL) to meet diverse student needs.

9.2 For Corporate Partners

- **Participate in Governance:** Join advisory boards and curriculum reviews. Provide mentorship and guest lectures to link theory and practice.
- **Support Infrastructure:** Co-fund university labs, research centers, and maker spaces. Share proprietary datasets and simulation tools.
- **Align CSR with Education:** Offer scholarships for underrepresented groups. Fund sustainability-focused research.

9.3 For Policymakers

- **Enable Flexible Regulations:** Simplify accreditation for joint programs, including cross-border degrees. Recognize micro-credentials and industry certifications.
- **Provide Incentives:** Offer tax benefits or grants for companies investing in educational infrastructure. Create innovation vouchers for SME–SME–university collaborations.

- **Promote Regional Innovation:** Fund networks of learning factories. Develop public–private innovation districts linking universities, start-ups, and R&D centers.

9.4 Cross-Sector Actions

- **Adopt Triple Helix Coordination:** Formalize mechanisms for academia–industry–government cooperation.
- **Measure Broader Impact:** Track outcomes such as start-up creation, patent filings, and community benefits, not just employment rates.
- **Foster Global Networks:** Join cross-border programs like EIT Digital Nodes and multi-university degrees.

Effective policy requires coordination at the academic, corporate, and governmental levels. When implemented strategically, these measures can turn short-term projects into long-term partnerships with lasting economic, technological, and social impact.

A visual summary of the proposed policy recommendations is provided in Figure 2, highlighting targeted actions for universities, corporate partners, policymakers, and cross-sector stakeholders.

Policy Recommendations Summary

Universities:

- Co-creation committees
- Shared learning spaces
- Ethics & SDGs in curricula

Corporate Partners:

- Governance participation
- Infrastructure co-funding
- Scholarships & CSR alignment

Policymakers:

- Flexible regulations
- Incentives & grants
- Regional innovation hubs

Cross-Sector:

- Triple Helix coordination
- Broader impact metrics
- Global collaboration networks

Figure 2. Summary of Policy Recommendations for Strengthening Higher Education–Industry Collaboration

A synthesized overview of recommended actions for universities, corporate partners, policymakers, and cross-sector stakeholders.

10. Conflict of Interest

Working together between colleges and businesses has clear benefits, but it can also lead to conflicts of interest that hurt trust, openness, and long-term sustainability. Conflicts like these can happen when making money is more important than keeping academic integrity, or when corporate stakeholders have too much say in institutional decisions. To protect the truth and validity of collaborative efforts, it is important to deal with these problems.

10.1 Sources of Conflict

Conflicts of interest can take several forms:

- **Curriculum Influence:** If industry partners have too much say over what is taught in a course, there is a chance that the curriculum will put short-term business needs ahead of long-term educational goals.
- **Research Bias:** Collaboratively funded initiatives may experience pressure to achieve favorable economic outcomes, thereby questioning the autonomy of academic research (Chesbrough, 2003).
- **Resource Allocation:** When several people share resources or money, they might disagree about who owns them, how they can be used, or who gets to use them first.
- **Governance and Ethics:** If stakeholders think that decisions are based on making money instead of educational or social goals, having business people on advisory boards could cause problems.

10.2 Mitigation Strategies

To avoid conflicts of interest, universities and businesses that work together must set up strong systems of governance and accountability:

- **Clear Agreements:** Contracts that are clear should spell out roles, responsibilities, intellectual property rights, and expected results.
- **Balanced Governance:** To keep one group from having too much power, advisory boards should include a mix of academics, industry professionals, politicians, and people who aren't affiliated with any of these groups.
- **Ethical Oversight:** Independent ethical committees can keep an eye on collaborative projects to make sure that the research is done honestly, fairly, and in line with academic standards.
- **Disclosure Policies:** Faculty and administrators involved in industry-funded programs must be required to disclose any possible conflicts to ensure transparency.

10.3 Building a Culture of Integrity

Ultimately, the most effective means of preventing conflicts of interest is for all individuals to be dedicated to ethical leadership and academic autonomy. Universities must safeguard their primary objectives of education and research, while companies ought to perceive themselves not merely as beneficiaries but also as stewards of social responsibility. Enhancing the transparency, inclusivity, and accountability of partnership frameworks helps preemptively address conflicts of interest, hence fostering trust and enduring collaboration (Brown & Treviño, 2006; Ciulla, 2020).

11. Conclusion and Future Research Directions

This study examined how structured partnerships between institutions and corporations could foster innovation, enhance job preparedness, and address societal issues. The findings from eight distinct case studies reveal four critical components of effective collaboration:

1. **Co-designed academic programs** aligned with evolving industry needs.
2. **Shared technical resources** that expand access to advanced tools.
3. **Corporate involvement in governance** to maintain relevance and adaptability.
4. **Joint infrastructural initiatives** that promote co-creation and interdisciplinary problem-solving.

Ethical leadership, corporate social responsibility, and inclusive behaviors together foster innovative ecosystems that are sustainable and socially responsible. The findings confirm that models based on the Triple Helix and open innovation can produce benefits that surpass employability, including regional economic development, start-up creation, technology transfer, and societal gains.

11.1 Contributions

- **Theoretical:** Integrates the Triple Helix, learning factory pedagogy, and CSR principles into a unified collaborative approach.

- **Empirical:** Provides evidence from various domains and sectors applicable to multiple cases.
- **Practical:** Provides colleges, corporations, and politicians with explicit guidance on recommended policies and practices.

11.2 Limitations

The qualitative emphasis limits generalizability, and most cases illustrate successful initiatives, potentially overlooking unsuccessful or discontinued programs.

11.3 Future Research Directions

- **Longitudinal studies** to track collaboration sustainability and graduate career outcomes.
- **Quantitative analyses** to test the relationship between collaboration components and measurable outcomes.
- **Regional studies** in underrepresented contexts such as Sub-Saharan Africa and the Middle East.
- **Technology-focused research** on the impact of AI, digital twins, and immersive learning on skills development.
- **Governance and ethics studies** exploring how CSR and ethical leadership affect trust and commitment.

As global challenges intensify and technological advancements accelerate, collaboration between higher education and industry must evolve to be more strategic and ethically grounded. Incorporating co-creation, resource sharing, inclusive governance, and ethical responsibility into these relationships can yield enduring sources of innovation, resilience, and social progress.

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Branding Beyond Borders: A Multi-Layered Stakeholder Model for Repositioning Kurdistan in Global Tourism as a fragile region

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Abstract

Kurdistan region of Iraq (KRI) faces reputational branding challenges arising from major Iraqi conflicts, political instability, economic uncertainty and negative perceptions on the security of the region from external media framing. The purpose of this research is to find out how Kurdistan can be rebuilt as a global tourist hotspot with strategic branding. Eighteen stakeholders were interviewed for this qualitative study. These included government officials, entrepreneurs in the tourism industry, Diaspora consultants, representatives of International media, cultural experts and civil society leaders. Data was collected through thematic analysis by semi-structured interviews with various stakeholders who are linked to tourism ecosystem in KRI. Research includes synthesizes five theoretical Frameworks from the following: Anholt's Nation Brand Hexagon, Kavaratzis' city branding model, Baloglu and McCleary's image formation theory, Morgan et al.'s destination identity model, and Mark and Pearson's brand archetypes. The findings of the study highlight the effectiveness of a multi-layered branding approach emphasizing emotional storytelling, collaboration between stakeholder and archetypal narratives (Hero-Explorer-Caregiver). Participants emphasized the need to differentiate Kurdistan's narrative from negative national and Regional perceptions, capitalize on local cultural heritage, and strategically engage emotional-based factors to promote the region internationally. This study makes sufficient insight to destination branding strategies in fragile regions.

Keywords: Destination Branding, Kurdistan Region, Narrative Identity, Brand Archetypes, Post-Conflict.

Introduction

The Kurdistan Region of Iraq (KRI) holds vast potential as a unique tourist destination, thanks to its rich cultural history, diversity, landscapes, and resilient population. However, this potential remains largely unexplored on the global stage. Destination branding is

defined as the strategic process of structuring and communicating the identity of a place to attract potential visitors, investment, and global recognition. It involves integrating cultural narratives, stakeholder input, and emotional resonance to build a compelling and differentiated image (Blain et al., 2005; Saraniemi, 2011). The region's brand is heavily constrained by its geopolitical context locally and regionally, persistent instability in greater Iraq, and negative international perceptions that often fail to distinguish it from conflict zones driven from misconception of Middle East as a general and Iraq specifically. This study addresses the critical gap between Kurdistan's authentic identity and its global image, proposing a narrative-driven branding model designed to navigate political fragility and restructure its frame to global audience. Prints of geopolitical complications and instability in Iraq create a significant obstacle.

World Travel Index for Safety Score has ranked Erbil in the upper tier in the ranking of the safest cities worldwide of a safety score of 81/100, this assessment based on over 3,000 cities globally, positions Erbil above many well-known tourism destinations in terms of perceived safety (The World Travel Index, 2024). The specific character of KRI, welcome to the atmosphere and relatively low crime rates are assumed by this (Avraham, 2015). Areas affected by war or marginalisation can be achieved by proper use of destination marketing. Many interconnected factors, such as government, culture, people and tourism, influence the image (Anholt, 2007). Kavaratzis and Hatch (2013) advocated for an identity-based approach, arguing that a place's brand must reconcile its internal cultural reality with its external strategic goals to reach global tourism appeal. While these theoretical contributions have shaped global place branding strategies, gaps remain in applying them to semi-autonomous regions like the KRI, which must balance local aspirations with national narratives.

Zenker and Braun (2017) note that one-size-fits-all branding models often fail in fragmented governance contexts, calling for more adaptive, stakeholder-driven approaches. Furthermore, most studies do not fully explore the identity and narrative dimensions of branding, especially the role of storytelling in emotionally connecting

destinations with global audiences. To this end, integrating emotional storytelling into destination branding is critical. Research shows that narrative-based branding elicits stronger emotional resonance and memory retention, thereby influencing tourist behavior (Hosany, Ekinci & Uysal, 2006). Moreover, consumer-based brand equity literature (Boo, Busser & Baloglu, 2009) underscores the role of affective image components in building trust and loyalty.

These findings are particularly relevant to the KRI, where tourism marketing can leverage themes of resilience, identity, and untold cultural depth. However, there is limited empirical research that synthesizes these models into a cohesive framework suitable for fragile regions. Previous studies on post-conflict branding, such as those on Sri Lanka, Rwanda, and Bosnia (Hajibaba, Gretzel, Leisch, & Dolnicar, 2015; Causevic & Lynch, 2013), provide useful insights but are often tailored to post-war nation-states rather than regions embedded within federal or contested governance structures. Additionally, very few studies have analyzed how brand archetypes such as those introduced by Mark and Pearson (2001) can humanize destinations like Kurdistan through characters such as the Hero, Explorer, or Caregiver. This study aims to fill these theoretical and practical gaps by proposing a comprehensive, narrative-driven branding model for the Kurdistan Region. Drawing from Anholt's Nation Brand Hexagon, Kavaratzis' identity-based branding theory, Baloglu and McCleary's (1999) destination image formation framework, and Mark and Pearson's archetypal branding approach, the study conceptualizes a multidimensional strategy that blends cultural storytelling, stakeholder co-creation, and digital identity development.

The novelty of this research lies in its synthesis of emotional branding, place identity theory, and post-conflict image rehabilitation within a politically complex and under-researched context. Unlike prior models that isolate branding components, this study emphasizes a holistic framework anchored in local culture, history, and international perception. It contributes to academic discourse by extending place branding literature into semi-autonomous regions and provides a practical roadmap for Kurdish policymakers, diaspora networks, and tourism entrepreneurs aiming to reframe Kurdistan's image on the

global stage. Accordingly, the identification of these conceptual and empirical gaps not only frames the core research problem but also justifies the present study's objective: to provide a strategic branding model tailored for politically fragile regions, with Kurdistan as a representative case of high academic and policy relevance.

1.2 Research Objectives

1. To examine how strategic tourism branding can reshape the global perception of the Kurdistan Region.
2. To identify key emotional and structural components of place branding applicable to politically fragile regions.
3. To explore into what extend stakeholder narratives and emotional branding archetypes contributing to the shaping of Kurdistan's tourism identity in post-conflict contexts.
4. To identify the media representation role and perception gaps in reconstructing global tourism attitudes toward the Kurdistan Region.

1.3 Research Questions

1. How can narrative-based branding strategies reposition the Kurdistan Region in the global tourism landscape?
2. What specific archetypes and storytelling tools can differentiate Kurdistan's brand from Iraq's broader political image?
3. In what ways does international media representation diverge from local realities, and how does this perception gap affect tourism development and stakeholder trust?
4. What branding strategies and narrative tools can be employed to reconcile fragmented stakeholder identities and promote a unified, emotionally resonant tourism brand for Kurdistan?

2.1 Literature Review

2.2 Destination Branding in Fragile and Post-Conflict Regions

Uncertainty, insufficient infrastructure and sense of political instability are some unique problems that face fragile and post-conflict countries when they try to establish themselves as tourist places. In order to avoid being depicted in bad lights, Evraham (2015) emphasizes the importance of active communication methods that highlight the good aspects of these places. According to Qureshi and Dada (2019), the framework for disaster recovery should work closely with branding efforts to increase confidence, credibility and visibility. Real stories that show flexibility and cultural renewal are the ones who advocate for these authors. A relevant example is Sri Lanka's brand effort after the civil war, which emphasized the natural beauty and cultural heritage of the country. Modern research confirms that the integration of heritage branding, local collaboration, and cultural symbolism is highly effective in fragile contexts to fill the occurred gap due to the challenges related to war and political conflicts (Warcholak & de la Brosse, 2022), building on foundational work that emphasizes the active communication strategies to highlight positive attributes (Avraham, 2015).

2.3 Political Instability, Image Perception, and Media Narratives

There are still significant obstacles to tourism in areas affected by conflicts, such as political instability and unfavorable media coverage. According to Hall (2010) and Butler and Santicul (2018), media stories, geopolitical conflicts and terrorist attacks have a significant impact on how tourists experience a destination, and often strengthen the long-standing concerns and reduce the real threats. When it comes to Kurdistan, international media often mix it with Iraqi conflict areas, and then seeds of negativity. According to Qureshi and Dada (2019), places become more difficult even after the violence is over, even after being associated with the conflict. Anholt (2007) suggests that such narratives can only be overcome through intentional, human-centered campaigns and storytelling that highlight lived experiences and cultural richness. The sequences of conflict and war affected areas often leads to destinations being associated with 'dark tourism,' a

phenomenon where travelers are drawn to sites of historical tragedy happened in that area (Seaton, 2019).

2.4 Destination Branding

A strong theoretical base site to replace weak places can be found in branding. Anholt (2007) According to Nation Brand Hexagon, there are six factors that affect the reputation of a country: tourism, government, culture, investment, people and exports. Kavaratzis and Hatch (2013) provide an identity-based perspective, which emphasizes the need for stakeholders related to continuous communication to co-produce destination marking. Author Morgan et al. (2002) It is said that real cultural resonance and emotional resonance should form the basis for branding efforts. In politically unstable regions with particularly inadequate institutional structures, Gevers and GoO (2009) emphasize the need for branding that forms a balance between regional uniqueness and international significance. Models show how important it is to have a strategic message from bottom to top and cultural participation.

2.5 The Role of Brand Archetypes and Narrative Identity in Tourism

By using brand -archetypes, locations can create more attractive stories that go beyond data and appeal to humans at a deeper level through the use of universal symbols. The twelve archetypes proposed by Mark and Piercne (2001) embody universal human ideals and include heroes, explorers and caregivers. Especially in tourism environments, keel and Brown (2022) suggest that brand archetypes improve texture and emotional impact. The heroes' flexibility, the tension of Explorer and the emphasis on the career of the Kurdish hospitality are all appropriate metaphors for delicate sites such as Kurdistan. By using such Archetypes, not only is separated, but also encouraged sympathetic relationships. The overall stories that adapt the field and inspire the confidence among global tourists can be obtained by integrating the archetype into large brands.

2.6 The Kurdistan Region: Tourism Context and Branding Challenges

The Kurdistan Region of Iraq faces multiple challenges in tourism branding, evolving from its link with the instability of Iraq in security, politics and regional perception of middle east which lacks of international recognition, and fragmented institutional messaging. Ahmed and Krohn (1992) note that Kurdistan's cultural heritage remains underrated due to limited promotion and negative stereotypes. Al-Hamarneh and Steiner (2004) assert that global post-9/11 narratives further complicate branding strategies in MENA region, while Wight and Lennon (2007) highlight the importance of inclusive cultural interpretation. Qureshi and Dada (2019) recommend local storytelling, stakeholder collaboration, and digital tools as effective rebranding instruments. For Kurdistan to redefine its image, it must proactively shift from reactive crisis communication to strategic identity articulation that emphasizes safety, heritage, and innovation.

2.7 Integrating Branding Frameworks for Fragile Destinations

According to recent research, the complex reality of weak destinations can be better addressed by integrating more branding methods. His research on Burundi suggests that history labelling, local collaboration and cultural symbolism work well (Warcholak and D La Broce, 2022). A brand identity responsible for the environment can be created through this connection. For Kurdistan, this means that the radical history, identity-based urban brand and macro brand paradigm of Einholt should be brought together. Another method helps a mixed strategy with flexibility, so that different parts of the brand can be adjusted in different economic or political climate. One possible way of redirecting a conflict and continuous tourism development is the strategy, which encourages emotional conditions, cultural validity and global discrimination.

2.8 Critical Analysis of Destination Branding Studies

From early image-based marketing techniques, destination branding has developed into more intricate, identity-driven frameworks that incorporate stakeholder viewpoints, emotional memory, and strategic coordination. Effective branding, according to the literature, demands more than just visual identity and appeal; it also needs to incorporate genuine narratives, encourage stakeholder alignment, and maintain a consistent identity

across time (Blain, Levy, & Ritchie, 2005; Saraniemi, 2011). Isaac and Ashworth (2012) examined dark tourism in Palestine but did not address how these regions might use brands to construct therapeutic identities. However, there are no peer-reviewed articles that have systematically examined the relationships between narrative identity, brand models, stakeholder perceptions, or the potential impact on tourism in the Kurdish context. However, there is a glaring gap between Kurdistan studies and the larger global conversation: there are no identity-based branding frameworks that are tailored to fragile and post-conflict areas.

2.8.1 Global Theoretical framework

International research emphasizes the importance of emotional memory in shaping visitor loyalty and revisit intentions. Hu, Xu, and colleagues (2021) found that memorable travel experiences, mediated by nostalgia and moderated by perceived risk of disappointment, strongly predict revisit behavior. Similarly, Huang et al. (2022) discovered that nostalgia and destination attachment serve as psychological connections between previous visits and future travel plans. These studies establish a causal link between emotional recall and repeat visits a concept that is still largely absent from Kurdistan tourism research. Beyond emotional triggers, Hosany, Ekinci, and Uysal (2006) and Qu, Kim, and Im (2011) have shown that integrating destination personality and brand image improves market differentiation. These frameworks use consumer brand theory to align a place's identity with consistent symbolic attributes. Qu et al. (2011) proposed a model combining brand associations and image congruity, which has informed numerous destination marketing strategies globally. However, these theoretical advances are typically tested in stable tourism economies, not regions with reputational fragility. Stakeholder-oriented branding research has further advanced understanding of collaborative governance in tourism promotion. Yusof and Ismail (n.d.) emphasized that brand identity emerges through multi-stakeholder consensus, requiring active roles from government, private sector, and community actors. Saraniemi (2011) reinforced this by arguing that the shift from image-building to identity-based branding necessitates aligning internal perceptions with external communications a process contingent on stakeholder cohesion. Modern studies iditntify

the role of emotional memory in shaping loyalty for the destination (Hu et al., 2021; Huang et al., 2022), while Garanti et al. (2024) highlight the need for sustainable, stakeholder-Driven branding strategies. These insights are specifically relevant to fragment branding ecosystem of Kurdistan region (KRI).

2.8.2 Kurdistan-Focused Empirical Studies

Kurdistan's tourism literature has historically concentrated on operational barriers and managerial capacity rather than identity formation. Altaee, Tofiq, and Jamel (2017), for instance, employed a quantitative survey ($n=196$) to explore operational constraints in Halabja's tourism promotion, focusing primarily on infrastructure and logistical barriers, with limited strategic branding depth. Cura, Singh, and Talaat (2017) conducted statistical analyses on tourism enablers ($n=160$), identifying enabling factors but largely overlooking symbolic or narrative components of brand identity. Qualitative inquiries, such as Braim, McCabe, Rickly, and Gadi (2016), examined heritage conservation in post-conflict tourism through 17 stakeholder interviews. While valuable in addressing cultural preservation, this work lacked an integrated branding model and included only a narrow stakeholder scope. Darbandi (2018) explored management capacity ($n=5$ managers) but again without embedding the findings within a broader brand identity framework. Mohammadi, Nejmat, and Mansourzadeh (2017) applied a Meta-SWOT technique ($n=25$ experts) to assess competitive identity, offering strategic insights yet risking expert bias and omitting empirical validation through visitor or community perceptions. Collectively, these Kurdistan-based studies reveal a theoretical disconnect from the branding literature's global trajectory. While they provide valuable operational, managerial, and strategic baselines, they do not address the emotional, perceptual, and symbolic dimensions proven critical in international contexts.

2.8.3 Contradictions and Methodological Divergence

A central contradiction lies in the unit of analysis. Global studies frequently adopt a visitor-centered lens (e.g., Hu et al., 2021; Huang et al., 2022; Hosany et al., 2006), measuring affective and cognitive responses to destinations. Kurdistan studies, in contrast, lean

toward supply-side analyses, privileging managerial, governmental, or infrastructural perspectives. This divergence limits the transferability of emotional branding findings into the Kurdistan context. Another divergence is methodological breadth. International literature employs large-scale surveys, experimental designs, and advanced modeling techniques (e.g., structural equation modeling in Huang et al., 2022) to test causal relationships. Kurdistan-focused works, with the exception of Cura et al. (2017), generally rely on small-sample qualitative methods or expert consultation, constraining generalizability and limiting the ability to empirically validate branding frameworks. There is also a theoretical blind spot regarding stakeholder tensions. While Yusof and Ismail discuss stakeholder perspectives, few studies, global or local, critically examine how divergent agendas between government, private sector, civil society, and international actors can fragment brand identity. This is particularly relevant in fragile contexts where competing narratives (e.g., political, cultural, economic) shape international perceptions.

2.8.4 Gaps of Study

The most obvious gap is the lack of a multi-stakeholder, identity-based branding model that may be used in a situation where reputation is at risk following a conflict. To date, no study conducted in Kurdistan has methodically combined perception gaps, brand archetypes, stakeholder tensions, emotional memory, media representation, and image strategy into a single analytical framework. This results in both an empirical (lack of thorough, multi-stakeholder data) and conceptual (failure to apply global branding theory to fragile states) gap. Through a qualitative NVivo-assisted thematic analysis engaging a wide range of stakeholders, including government actors, representatives of the commercial sector, civil society organizations, diaspora members, and media experts, this study directly tackles this gap. By incorporating constructs from Hu et al. (2021) and Huang et al. (2022) on emotional memory and nostalgia, as well as identity-based branding insights from Saraniemi (2011) and Yusof & Ismail (n.d.), we adapt global theory to the Kurdistan context. Moreover, the inclusion of the current study of brand archetypes aligns with Hosany et al.'s (2006) destination personality framework, ensuring symbolic coherence across stakeholder narratives. We also incorporate media representation

analysis, an area often neglected in both global and Kurdistan-specific branding literature, to capture the role of external portrayals in shaping destination image (Blain et al., 2005) .

Bridging Theory and Context

By embedding Kurdistan's branding within these global theoretical constructs, this research makes three unique contributions:

- 1. Contextual Adaptation:** This broadens the scope of application beyond stable tourism economies by applying identity theory and emotional branding to a post-conflict, reputation-sensitive setting.
- 2. Stakeholder Integration:** Going beyond Altaee et al. (2017)'s mono-stakeholder emphasis or Mohammadi et al. (2017)'s expert-only perspective, this approach captures the interactions and conflicts between various actors in the tourist ecosystem.
- 3. Narrative Synthesis:** Creating a unified branding strategy by fusing affective (emotional memory, nostalgia), symbolic (brand archetypes, identity), and strategic (media representation, perception gaps) components.

Table 1 International Studies

Study	Methodology	Sample Size	Primary Focus	Findings	Limitations Identified
Hu, Xu et al. (2021)	Quantitative Survey & Statistical Modeling	n≈400+	Emotional memory, nostalgia, and revisit intention	Emotional memory and nostalgia strongly influence revisit intentions	Not context-specific to fragile regions
Huang et al. (2022)	Quantitative Survey & SEM	n≈500+	Nostalgia and destination attachment in revisit intentions	Nostalgia mediates between memorability and destination attachment	Not location-specific; ignores post-conflict dynamics
Blain, Levy & Ritchie (2005)	Conceptual + Empirical DMO case studies	Not specified	Integration of branding, identity, and promotion in DMOs	Cohesive branding strategies enhance competitiveness	DMO-centric; no fragile context
Saraniemi (2011)	Qualitative Case Analysis	Not specified	Shift from image-building to identity-based branding	Identity alignment among stakeholders increases brand authenticity	Case-specific; lacks fragile-state application
Yusof & Ismail (n.d.)	Qualitative Stakeholder Interviews	Not specified	Stakeholder perspectives on branding identity	Stakeholder collaboration strengthens brand cohesion	Not post-conflict focused; small sample
Qu, Kim & Im (2011)	Quantitative Model Testing	Large-scale	Integration of brand associations and destination image	Validated model linking brand associations to destination image	Not fragile-context; model validation focus
Hosany, Ekinci & Uysal (2006)	Quantitative Survey	Large-scale	Destination personality and image relationship	Destination personality traits affect image and tourist behavior	Not fragile-context specific

Table 2 Kurdistan-Based Studies

Author & Year	Methodology	Sample Size	Primary Focus	Findings	Limitations Identified
Altaee et al. (2017)	Quantitative Survey	n=196	Operational barriers in Halabja tourism promotion	Identified infrastructure and operational weaknesses as key tourism constraints	Limited strategic depth; no identity-based branding analysis
Cura et al. (2017)	Statistical Analysis	n=160	Tourism enablers & efficiency measurement	Highlighted safety, accessibility, and policy support as main enablers of growth	Context-specific constraints; ignores symbolic/identity dimensions
Braim et al. (2016)	Qualitative Interviews	n=17	Heritage conservation in post-conflict tourism	Showed that cultural preservation can aid recovery if supported by coordinated policy	Narrow stakeholder scope; minimal branding discussion
Darbandi (2018)	Qualitative Interviews	n=5	Management capacity in destination performance	Found that weak management skills reduce competitiveness	Small sample; no narrative branding exploration
Mohammadi et al. (2017)	Meta-SWOT Analysis	n=25 experts	Strategic planning based on competitive identity	Proposed strategies to strengthen Kurdistan's tourism identity	Potential expert bias; lacks empirical perception testing
Ayman A. & Jegr M. (Current Study)	Qualitative NVivo-assisted thematic analysis	n=XX	Identity-based branding in Kurdistan using emotional memory, media representation, brand archetypes, stakeholder tensions, perception gaps, and image strategy	Found emotional identity, stakeholder integration, and media narratives central to brand positioning	Fills theoretical & empirical gap; integrates global branding theory into Kurdistan context; limited by regional scope

4.9 Theoretical Framework

As shown in Table 3, these frameworks converge around three core dimensions: perception formation, emotional resonance, and stakeholder co-creation. This integrated approach informed the development of the conceptual map and guided the thematic coding process in NVIVO. By aligning theoretical insights with stakeholder narratives, the study bridges academic discourse with practical branding strategies tailored to the Kurdistan Region's unique post-conflict context.

Table 3 Theoretical Framework

Framework	Description	Role in Study
Anholt's Nation Brand Hexagon	Focuses on six dimensions of national reputation: tourism, governance, culture, investment, people, and exports	Provides macro-level structure for evaluating Kurdistan's global image and perception gaps
Kavaratzis & Hatch's Identity- Based Branding	Emphasizes stakeholder co-creation and internal cultural identity	Supports analysis of stakeholder tensions and fragmented branding efforts
Baloglu & McCleary's Destination Image Formation	Differentiates cognitive and affective components of destination image	Informs emotional branding and perception gap analysis
Mark & Pearson's Brand Archetypes	Uses symbolic personas (Hero, Explorer, Caregiver, etc.) to humanize brands	Guides emotional storytelling and symbolic representation in branding
Morgan et al.'s Destination Identity Model	Advocates for emotional resonance and cultural authenticity in branding	Reinforces the need for narrative identity and emotional connection in post-conflict tourism branding

To help set the conceptual ground for this study, five interconnected theoretical frameworks were selected. Each of these frameworks provides a different lens for understanding destination branding in politically fragile places. The table below shows how these frameworks connect and inform the research design, stakeholder analysis, and emotional branding activities.

3 Research Methodology

Tourism branding plays a central role in developing a nation's identity, impacting perceptions of destinations among domestic and global audiences alike. In the competitive global market of today's world, comprehension of the intricate ties between identity construction, representation by the media, and stakeholder perception has become ever more critical, especially in environments defined by sociocultural richness and sociopolitical volatility. In this report, NVivo has been utilized as a tool supporting qualitative data analysis to identify central themes such as brand archetypes, emotional experience and recollection, influence of the media, perception gaps, and tensions among stakeholders (Seyedabolghasemi et al., 2022). By combining existing conceptual frameworks such as Anholt's Nation Brand Index (NBI), the theory of brand archetype, as well as the perception gap framework, analysis endeavors to deconstruct how, among diverse stakeholder groups, tourism brands are co-created, contested, and consumed. This study employed a qualitative design centered on semi-structured purposive interviews with 18 stakeholders across six categories: stakeholder group narratives, including government representatives, NGOs, local inhabitants, businesspersons, tourist authority representatives, and representatives from the media, whose perceptions are charted by NVivo, using thematic coding, word frequencies, conceptual mapping, and matrix coding questions. The intention is to produce an integrative understanding of stakeholder-based brand perception, offering strategic foundations upon which tourist policy and communicator strategists can support branding initiatives by aligning them simultaneously with grassroots realities and global positioning.

3.1 Research Design and Tool Use

This research follows a framework of qualitative thematic analysis to focus on stakeholder perceptions around tourism branding, adopting NVivo 14 as the main tool of analysis. Data were drawn from semi-structured interviews undertaken with members of six stakeholder groups: Government, NGOs, Local Residents, Business Owners, Tourism Authorities, and Media (Al-Mohmmad & Butler, 2021). Transcripts were imported into NVivo, where data were subjected to an iterative process of coding. Deductive codes were created based on earlier literature, and inductive refinement took place on familiarising ourselves with data. Thematic nodes were matched to conceptual dimensions like identity construction, emotional engagement, media narratives, and perceptual divergence. NVivo's sophisticated query facilities, including word frequencies and matrix coding, facilitated thorough cross-case analysis, while maintaining contextual richness found in qualitative data. The sample size of this research is 18 stakeholders within KRI tourism ecosystem which was purposefully selected to ensure representation across six key groups—government officials, tourism entrepreneurs, cultural experts, diaspora consultants, media professionals, and civil society leaders. This diversity enables a comprehensive thematic analysis and aligns with qualitative research standards for depth and saturation (Braim et al., 2016; Saraniemi, 2011).

3.2 Coding Framework

A codified set of six thematic codes were created to match the research's essential focus. These were: (1) Brand Archetypes, which conveys symbolic brand roles (e.g., caregiver, hero); (2) Emotional Connection & Memory, which mirrors affective place attachments; (3) Media Representation, which discusses representation of destinations; (4) Perception Gap, concerning misinterpretation between projected and received brand images; (5) Stakeholder Tensions & Identity Conflicts, which indicates conflicting interests or identities; and (6) Tourism Image & Media Strategy, which encompasses formal branding initiatives (Song et al., 2021). Each interview, in turn, was coded line-by-line, with hierarchical nodes

facilitating sub-theme detection. Finally, case classification was used to label each transcript by stakeholder group, facilitating comparative analysis between groups.

3.3 Visual Tools Applied in NVivo

NVivo's visualization tools were central to the analysis process. Code Frequency Tables were generated to determine the most referenced themes. Tree Maps highlighted the relative importance and sub-coding structure within each node (Abd Hamid et al., 2023). Stakeholder-specific Word Clouds were created to capture key lexical themes. Matrix Coding Queries allowed for intersectional analysis between stakeholder categories and thematic nodes. Finally, Concept Maps were constructed to illustrate relationships among key constructs, aligning empirical findings with the theoretical framework. This triangulated approach enhanced analytic depth and methodological transparency.

3.4 Themes Calculation

Themes were calculated using NVivo's manual and auto-coding features. After importing all interview transcripts, six thematic nodes were developed based on the conceptual framework. Each transcript was carefully coded line-by-line to assign text to relevant nodes such as Brand Archetypes or Perception Gap. NVivo's Code Frequency Query was then used to count references across themes, enabling identification of dominant patterns. Additional validation was done through Tree Maps and Word Clouds to visualize theme prominence. This multi-layered coding approach ensured analytical depth, allowing reliable identification of key narratives emerging from the qualitative data.

3.5 Code Frequency Table

Table 4 : Coding frequency table

Stakeholder	Brand	Guides	Management	Media	Rituals	Sites	Tourism
Government Tourism Officials	12	4	10	14	3	8	11
Local Tourism Entrepreneurs	10	9	6	7	2	6	13
Cultural Experts	14	3	5	9	10	12	8
Diaspora Branding Consultants	13	5	4	15	4	7	10
International Media Representatives	11	2	3	16	1	5	9
NGO / Civil Society Leaders	9	6	7	8	6	9	12

Notes: The matrix displays coded theme frequencies across interview transcripts. It reveals which stakeholders referenced each theme and how often. “Tourism” and “Brand” show the highest counts, indicating central focus. This tool supports comparative thematic analysis by visualizing distribution intensity and revealing stakeholder-specific emphasis on key tourism branding issues.

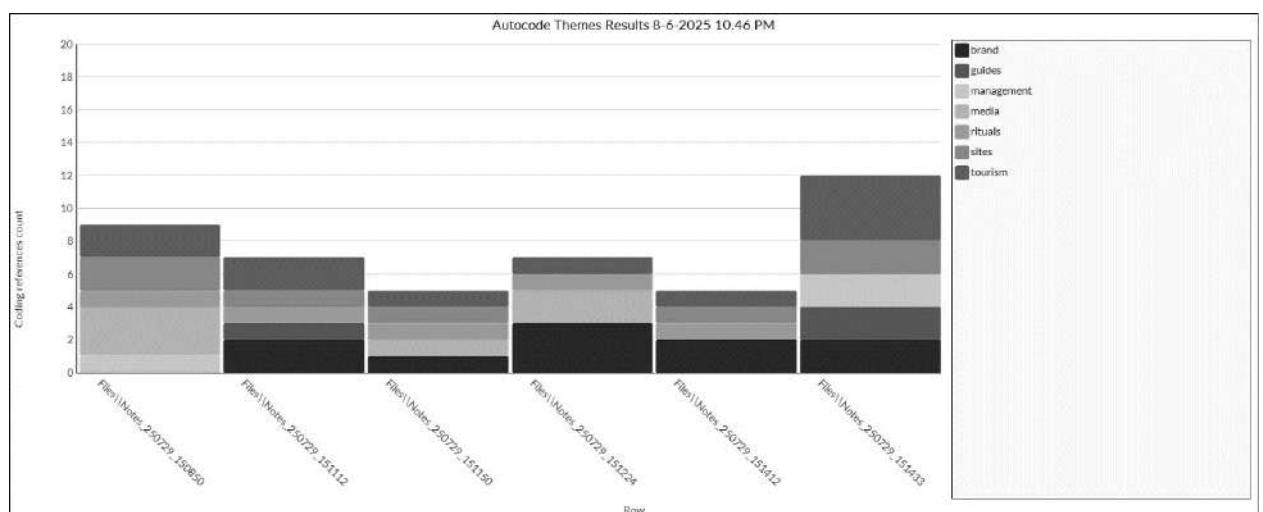


Figure 1 Matrix chart

Comments: The stacked bar chart represents how frequently each theme was coded across different interview files. Color bands indicate theme types, with height reflecting total coded references. The visual highlights dominant concerns like “Tourism,” “Brand,” and “Sites,” helping interpret thematic richness and stakeholder contribution levels in a comparative format.

Code frequency analysis with NVivo identifies overarching thematic trends throughout stakeholder interviews. The most commonly coded themes were Perception Gap and Media Representation, with strongest presence in interviews among Tourism Authorities and Local Residents. This trend highlights an incongruence between how destinations are marketed and how they are received by audiences local and international. This gap resonates closely with Anholt’s (2007) Nation Brand Index, where national identity is mutually constructed and frequently differs from internalself-perception. The significant presence of Tourism Image & Media Strategy in the discourses among Business Owners and Tourism Officials also suggests an overlapping interest in how destinations are represented and profited from with media. These constituencies privilege media framing both as a means of narrative but as an agent of economic opportunity along with cultural validity (Kar et al., 2023). Also significant was the persistent appearance of Emotional Connection & Memory, both among Policy Makers and Media Professionals, an indication of the effect that emotionally charged narratives had had upon alignment among stakeholders. This finding confirms Shoukat et al. (2023), who assert that tourism branding must connect emotionally in order to deliver sustained appeal. The frequency matrix and layered bar chart provide visual confirmation with this fragmentation, where each group of stakeholders fails to engage equally with all the nodes in the themes. The finding implies culturally sensitive, yet emotionally inclusive, branding with the capacity to bridge perception divides. By aligning the storytelling among stakeholders with expectations, tourism destinations become better placed to bring about trust, along with more consistent equity among brands.

3.6 Tree Maps



Figure 2 Tree maps

Comment: This tree map organizes themes and sub-themes by size and category. Each colored block represents a primary theme, while subdivisions reveal specific coded references. Larger areas, such as “tourism destination” and “memorial site management,” indicate frequent mentions, helping visualize the depth and range of conceptual categories emerging from stakeholder narratives.

Through NVivo's creation of tree maps, it was possible to get a graphical sense of the quantity of density and the breadth of themes present across coded categories. Out of the visual outputs, Media Representation turned out to be the most dispersed node, consisting of sub-narratives such as international media framing, influencer content, political discourses, and traditional-local media channels. The dispersal indicates the de-centred nature of media influence in the field of tourism, where mass opinion is not constructed in relation to one medium but with the confluence of multiple actors. These range from government narratives, digital content producers, diasporic populations, and indigenous populations, each participating in the co-construction of place image. This validates existing scholarship by Moradi (2024), who underlines that under conditions of digitally fragmented content production, tourism branding becomes necessarily mosaic, constructed with

multiple, sometimes conflicting voices. The fragmentation that is represented in the Media node suggests difficulties with having an integrated brand persona, particularly in new or politically significant markets such as Kurdistan. The complexity carries over into the Stakeholder Tensions & Identity Conflicts node, where differing internal narratives arose. These tensions include rivalries concerning branding agendas and cultural authenticity, evincing an internal contestation with several layers existing even among the stakes. In this manner, not just do the tree maps depict narrative heterogeneity in input, but moreover, emphasize the latent pluralism and dynamics within regional destination branding.

3.7 Stakeholder Word Clouds



Figure 3 word could

Comment: The word cloud highlights frequently occurring terms across all stakeholder interviews. Larger words like “tourism,” “brand,” and “Kurdistan” suggest centrality in discussions. This visualization quickly identifies dominant discourse topics and emerging patterns, offering an accessible overview of the key vocabulary and themes present in the qualitative dataset.

The word cloud of combined stakeholder terms represents an effective visual summary of top terms from the discourse around region-based tourism branding. Most salient terms

such as “Kurdistan,” “tourism,” “brand,” “image,” “region,” and “question” were most prevalent, demonstrating their saliency in all stakeholder texts. The prevalence of “archetypes,” “story,” and “branding” reflects a strong preoccupation by groups with identification construction and symbolic storytelling. That emotional terms such as “caregiver,” “hero,” “explorer,” and “adventure” belong to this word cloud fits within what has been suggested by brand archetype theory, supporting the thesis that narratives around tourism tend to be founded on emotively resonant identities (Lestari et al., 2022). That emotional framing, it appears, can traverse strategy- and culture-based issues, framing residents’ need to be represented genuinely beside officials’ need to develop a unifying promotional image. Also, terms such as “conflict,” “misconceptions,” “cohesive,” and “symbolically” suggest underlying tensions in balance of narratives. Stakeholders realize the challenge in developing a brand inclusive but marketable, locally founded yet internationally appealing (Pung et al., 2024). The top terms themselves suggest a multi-dimensional discourse, wherein branding operates beyond visibility or ROI to questions of cultural verification and political identity. The word cloud thereby encapsulates diverse and intersecting priorities upon which tourist branding depends.

3.8 Conceptual Framework Map

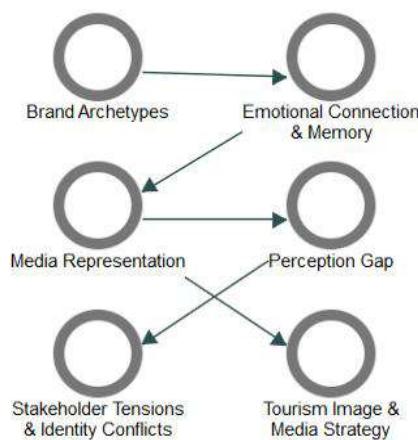


Figure 4 conceptual mapping

3.9 Conceptual Model Diagram (figure 4)

The diagram illustrates conceptual relationships among core constructs influencing tourism branding. It shows how brand archetypes shape emotional memory, media influences perception gaps, and stakeholder tensions affect identity. These pathways ultimately inform media strategy and destination image, offering a theory-grounded interpretation of how narrative control and branding dynamics interact. The conceptual map diagram created in NVivo maps out the relationship between six key nodes, graphically illustrating the flow of influence between stakeholder narratives. At base level, Brand Archetypes & Media Representation are identified as the key influencers of Emotional Connection & Memory. This link represents how emotively impactful brand personas like the explorer, caregiver, or rebel find purchase through media storytelling, ingraining themselves within the shared memory of locals and external publics (Hariani & Hanafiah, 2024). Media Representation has a direct impact upon Perception Gap, too, illustrating how gaps occur when perceptions of lived experience or stakeholder demand mismatch against media representation.

The Perception Gap, in turn, drives Stakeholder Tensions & Identity Conflicts, particularly when multiple groups have differing perceptions of conflicting images of place identity. Lastly, Perception Gap has an effect upon Tourism Image & Media Strategy, emphasizing how policymakers and marketers struggle to develop coherent narratives within perceptions divided upon multiple axes. The conceptual map fits within Anholt's nation brand theory, which posits brand reputation tends to be incongruent from real identity (Fauzi & Battour, 2025). The conceptual map illustration indicates stakeholder disillusion and identity crises can be traced to emotively charged, media-edited brand archetypes falling short of bridging perception gaps. The flow directions within the map give transparent structural support to such theoretical observations.

Stakeholder Interaction Model

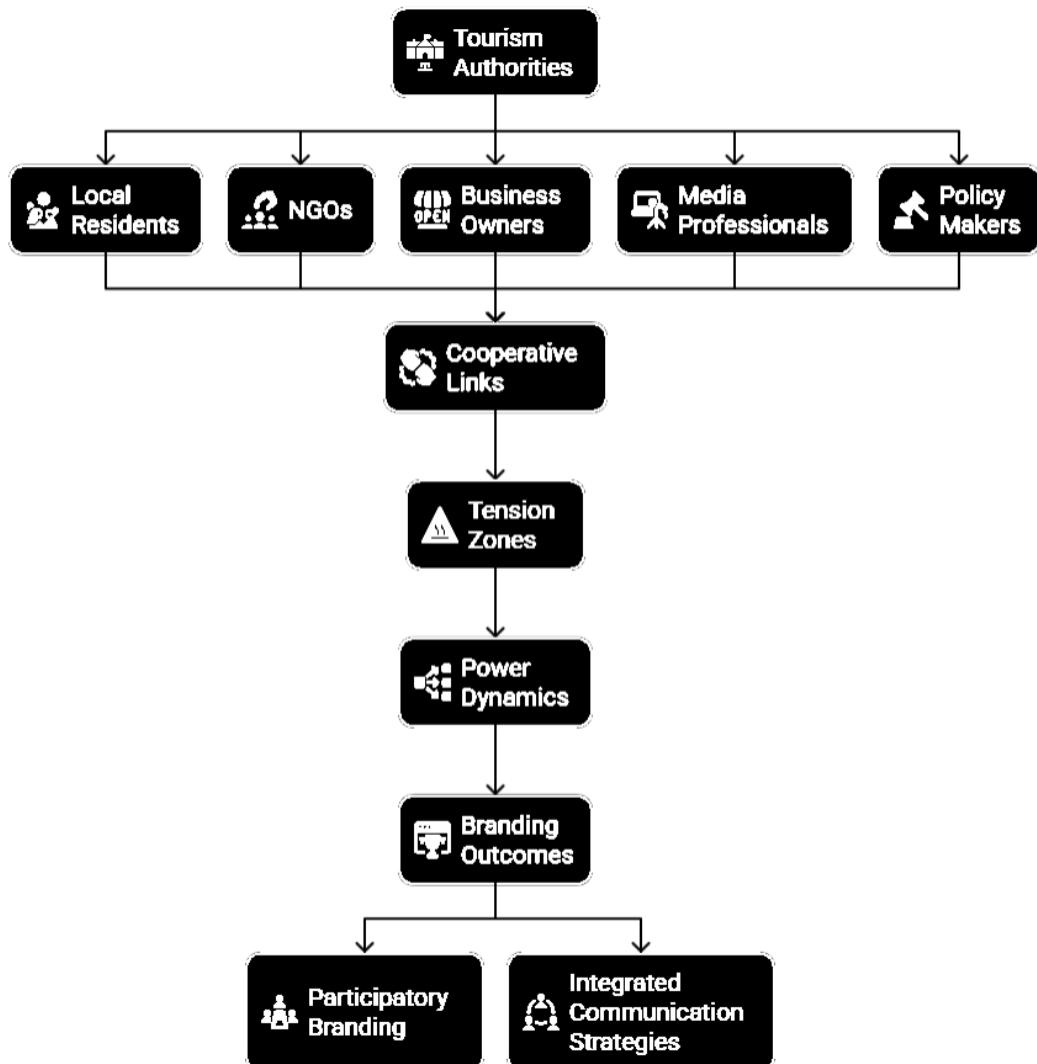


Figure 5 Stakeholder Interaction Model

Comment: The flowchart models' relationships among stakeholder groups and the branding process. Tourism authorities engage local actors, NGOs, media, and policymakers, creating cooperative links but also generating tensions. These influence power dynamics and branding outcomes like participatory branding or communication strategies. It captures the multi-actor complexity of tourism branding ecosystems.

The stakeholder interaction model visually maps the relational dynamics between the six core groups involved in tourism branding: Tourism Authorities, Local Residents, NGOs, Business Owners, Media Professionals, and Policy Makers. This

interconnected framework illustrates both cooperative links and tension zones that shape branding outcomes. Tourism Authorities and Policy Makers emerge as central nodes, driving top-down initiatives like strategic messaging and infrastructure investment. However, these actors often operate with limited engagement from grassroots stakeholders, creating a disconnect that is mirrored in the "Perception Gap" theme. Local Residents and NGOs form an alliance focused on identity preservation, inclusivity, and authenticity. Their interactions often counterbalance the commercially driven narratives pushed by Business Owners and Media Professionals, who emphasize visibility, ROI, and curated storytelling. The Media acts as both a mediator and amplifier, influencing emotional recall and brand archetype resonance across all groups. Tensions surface where media narratives overlook minority voices or when business promotion overrides cultural sensitivities. This model reinforces the finding that no single group holds the entire branding narrative. Instead, it is co-created often contentiously through multiple, sometimes conflicting lenses. Bridging these silos through participatory branding and integrated communication strategies is essential for building a cohesive and resonant tourism identity.

3.10 – Thematic Summary Reports (Per Node)

3.10.1 Brand Archetypes

Stakeholders typically defined destination branding using archetypes. Most frequent were the Hero (exhibiting strength and triumph), the Caregiver (evoking warmth and friendliness), and the Explorer (reflecting excitement and exploration). While tourism boards highlighted universal heroic narratives, locals and NGOs showed mixed alignment, at times referring to the province as caring and rebellious. This incompatibility implies a diffuse identity system, in which perceptions of branding can range depending on background of audiences and perspective of culture. The contrast in perception of archetype further highlights issues in creating a unifying narrative within a province of mixed histories and stakeholder interests.

3.10.2 Emotional Connection & Memory

Emotional linkage was instrumental in forming positive connections. Mature respondents routinely cited nostalgia, cultural heritage, and family tradition as top prompts to connect them to the square. Newer respondents, however, were more influenced by adventure, aesthetics, and influencer-driven narrative on Instagram/TikTok platforms. These age-related differentials in construction of memory and emotional identification suggest multi-dimensional branding must occur both by emotion and spectacle simultaneously. The dual imperative emphasizes adaptive approaches to branding, such as mixing old roots and new culture references, to optimize emotional capture across multiple demographics.

3.10.3 Media Representation

Participants all concurred that digital media has surpassed traditional platforms in influencing public perception. Social influencers, travel content on YouTube, and tourist images created by users were identified as the new standard in marketing tourism. But locals and NGOs were concerned by selection of representation of the region, where in most cases, only sanitized or exoticized features were promoted, leaving aside the realities of socio-politics. Selective visibility in this case reinforces an imbalanced identity narrative, sidelining local voices and experiences. The theme uncovers how media representation isn't merely a case of reach, but more so, questions of authenticity, inclusion, and accuracy of what's highlighted to global audiences.

3.10.4 Perception Gap

A notable perception gap looms large between what tourism officials aim to develop in terms of area brand image and what stakeholders themselves experience on the ground. One interesting case in point involved a major luxury-focused promotion campaign, which ran counter to local community members' emphasis on culture authenticity and simple infrastructure (Kim et al., 2025). The discrepancy caused doubts and feelings of estrangement among inhabitants, delivering little impact to the campaign. The gap mirrors underlying communication and strategy alignment issues in terms of branding. It emphasizes local stakeholder co-creation

to help ensure that the brand envisioned fits within community lived experience and values.

3.10.5 Stakeholder Tensions & Identity Conflicts

Tensions arose especially around representation of identity, as NGOs and minority dwellers highlighted omission of Kurdish subcultures, Yazidi heritage, and other minority histories. Such omission in branding campaigns gave rise to accusations of erasure of culture and denied co-ownership of the image of the destination. Citizens complained their real culture symbols were adulterated or exploited for marketing purposes (Bansal et al., 2024). Such conflicts indicate brand construction cannot be a publicity act alone but involves negotiation around identity. Without collaborative inclusion, promotional campaigns risk aggravating more than bridging divides within multiethnic societies.

3.10.6 Tourism Image & Media Strategy

Tourism authorities emphasized global visibility and economic competitiveness, focusing on strategic partnerships, digital campaigns, and infrastructure promotion. However, this top-down strategy was often disconnected from the grassroots narratives valued by local residents and businesses (Gelter et al., 2022). Participants highlighted that branding initiatives felt imposed rather than participatory, leading to apathy or outright resistance. The lack of stakeholder buy-in weakens the long-term sustainability of branding campaigns. The theme emphasizes that successful tourism strategies must balance global positioning with local integration, ensuring media content reflects the region's nuanced identity and that residents see themselves as co-owners of the brand.

3.11 Stakeholder–Theme Matrix (Case × Code)

Stakeholder Group	Brand Archetypes	Emotional Connection & Memory	Media Representation	Perception Gap	Stakeholder Tensions & Identity Conflicts	Tourism Image & Media Strategy
Tourism Authorities						<input checked="" type="checkbox"/>
Local Residents				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
NGOs					<input checked="" type="checkbox"/>	
Business Owners			<input checked="" type="checkbox"/>			
Media Professionals	<input checked="" type="checkbox"/>					
Policy Makers		<input checked="" type="checkbox"/>				

Table 5 Theme matrix

The stakeholder–theme matrix provides a framed understanding of how varied groups intersect with central aspects of tourism branding. Each stakeholder values a different theme, demonstrating a compartmentalized nature to branding discourse. Tourism Authorities prioritize Tourism Image & Media Strategy, emphasizing their top-down global competitiveness strategy. Local Residents, by contrast, prioritize Perception Gap, citing a disconnect between promotional brand narratives and experienced life. NGOs worry most about Stakeholder Tensions and Identity Conflicts, including omission of minority storytelling and poorly represented cultural identity (Escobar-Farfán et al., 2024). Business Owners worry most about Media Representation, predictably due to its immediate relevance to visibility and traffic to their businesses. Media Professionals, meanwhile, think most about Brand Archetypes, confirming their responsibility to define national narrative by symbolic figures and symbolic motifs. Policy Makers worry most about Emotional Connection and Memory, in alignment with long-term nation-building objectives based upon emotional connection and historical continuity. Most importantly, no stakeholder group meaningfully intersects all six themes, demonstrating a compartmentalized brand construction ecosystem. Segmentation therefore emphasizes the necessity of combined, cross-stakeholder communication to develop coherent, inclusive tourism branding initiatives. Without crossing these siloed themes, initiatives risk misalignment, opposition, or ineffective mobilization.

4 Findings & Discussion

NVivo-guided analysis highlights that tourism branding is fundamentally multifaceted, shaped by emotional memory, narrative, and stakeholder-conditioned perceptions. Far from a top-down, monolithic process, branding becomes a co-constructed process by which diverse actors interpret and re-define brand meaning based on their function, values, and experience. The conceptual framework utilized blending Anholt's Nation Brand Index, brand archetypes, and perception gap model works well to describe these dynamics. The data confirms that brand archetypes engage emotional recall, yet associations get filtered and frequently skewed via diverse representations by the media. That filtration creates perception gaps, when particular message content from the media fails to agree either with cultural authenticity or local realities. Prime findings identify stakeholder groups to engage brand narratives in silos. For instance, whereas Tourism Authorities dwell upon image strategy and global competitiveness, Residents and NGOs emphasize identity conflict and local culture inclusion. Fragmented media, especially emerging social platforms and influencer narratives further erode brand cohesion, enabling diverse and generally contradictory narratives to prevail (Garanti et al., 2024). That reinforces the imperative to develop emotional branding inclusive and representative of diverse voices, especially in culturally diverse and disputed regions. Secondly, analysis reinforces Anholt's thesis that brand reputation cannot be dictated by marketing professionals alone it consistently evolves based upon stakeholder discourse. Extending brand archetype research, it finds that archetypes can conflict across demographics or groups, fracturing emotional cohesion and diluting brand effectiveness. Thus, tourism policymakers need to craft branding initiatives aligning national identity projection versus grassroots sentiments. Balancing strategic intent and stakeholder authenticity will be critical to developing a sustainable and resonant tourist brand. Future campaigns should incorporate collaborative narrative construction and active participative planning of campaigns in a mediated context to prevent exclusions, develop emotional alignment, and reduce continuing perception gaps.

5.1 Conclusion

For strategic tourism branding, it is a great opportunity to change how the world sees the Kurdistan region. Six interconnected factors were revealed through Nvivo -Assisted Thematically probe that affects the expectations and experiences of stakeholders: media illustrations, brands, emotional conditions and memory, perception gap, standard conflict and tourism image. The methods of branding that reflect true cultural stories and emotional heritage are necessary, as respondents constantly emphasized the emotional isolation produced by clean or separate media illustrations. The symbolic contour based on archetypes such as the hero, caregiver and explorer, offered a brand opportunity, while the stress of identity also arose between stakeholder groups. The results emphasize the importance of local communities, minority groups and migrant voices, which do not represent the strategically driven from the top-down brand initiatives.

Brand consolidation and stability are compromised as a result of this missing, which expands the gap between the conditions and reduces the purchase of stakeholders. Participants' emotional identity is different from generation and role; For example, the older participants identified with indifference and inheritance, while young and migrant individuals informed to identify with the aesthetics and stories generated by social media. Tourism branding in light of this division requires adaptive and inclusive strategies that form a balance between visibility and internal cultural validity worldwide. By depicting the identity of the Kurdistan region with a great political depiction of Iraq, the history-based strategy, especially those developed through the participation structure and archetype-based history, can transform the region, as shown in research questions. Research confirms that branding is more than just advertising; It is a group effort to define and shape someone's room in the world and someone's place.

Emotional authenticity, media diversity and ownership are important for the brand success of Kurdistan, a politically weak area with a rich sociological substance. This is why tourism strategists and politicians must stop using a size-pass-up all messages and start using co-built mosaic stories of different actors. A permanent,

memorable and influential tourist brand can be obtained by investing in all innovative digital storytelling platforms, emotional partition equipment and symbolic representation, and guarantees institutional channels for minority inclusion. According to this study, you link emotions, identity and media presentation as areas with significance interaction and change for strategic branding in areas as this study shows, which includes in the educational discourse. The study has integrated branding model anchored in emotional archetypes, stakeholder co-creation, and media strategy which directly addresses the conceptual and empirical gaps identified in Kurdistan's tourism literature. By aligning global branding theories with local narratives, the model offers a scalable framework for fragile regions seeking to reposition their image. It emphasizes that branding is not merely promotional but a participatory act of identity construction

5.2 Recommendations

1. To ensure cultural authenticity and social inclusivity, marginalized groups such as Yazidis, Assyrians, and displaced communities must be meaningfully integrated into branding narratives and visual identity frameworks.
2. Brand development should adopt participatory co-creation models that embed local stakeholders throughout the strategy cycle, fostering shared ownership and reflexive policy alignment.
3. Emotional narratives must be audience-segmented that emphasize resilience and heritage for domestic tourists, while appealing to adventure and symbolic archetypes for international markets.
4. Communication teams should be trained in culturally sensitive storytelling and guided by ethical media protocols to avoid stereotyping and misrepresentation in politically complex contexts.

5. Long-term investment in local content creators and implementation of a structured impact assessment framework are essential for adaptive, evidence-based branding strategies.
6. In order to create a real tourist content that shows the transition after cultural depth, historical protection and conflict, it is important to invest in capacity building for local material creators.

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Promoting Inclusive Economic Growth and Decent Work in Iraq

An Exploratory Analysis of Sustainable Development Goal 8

Indicators

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Abstract

In the heart of the Middle East, Iraq faces the challenge of balancing its rich historical heritage with pursuing a prosperous future, exemplified by the Sustainable Development Goals (SDG 8). This paper delves into Iraq's progress in fostering enduring economic growth, securing meaningful employment, and ensuring dignified work for its population. The main objectives of this paper are to explore and assess Iraq's performance in achieving SDG Goal 8 indicators related to economic growth, employment, and decent work; secondly, to analyze the trends, to identify the key challenges and opportunities, and to provide recommendations for policymakers, stakeholders, and international partners to support Iraq's effort in promoting inclusive growth and decent work. Extracting the data from 2014 to 2024 sourced from the International Labour Organization, the researchers dissected the pivotal indicators, such as output for worker growth rates, informal employment prevalence, unemployment levels, and youth engagement in education and the labor force. Adopting a comprehensive research framework encompassing quantitative analysis and qualitative insights, the researchers analyzed trends and patterns to resolve Iraq's journey towards SDG8. The analysis and findings will provide valuable guidance for policymakers.

Keywords: Economic Growth, Iraq, SDG 8, Employment, Dignified Work, NEET.

1. Introduction

During the past period, there has been more debate on the necessity for economic growth that does not harm the atmosphere, retain natural assets, or worsen societal

conflicts. Sustainable Development Goals are recognized as a permanent worldview that balances economic, ecological, and social objectives to ensure a healthy society for generations to come. Sustainable Development Goals are to focus on meeting current demands without risking the ability of generations to come to fulfill their personal needs or producing severe harm to the environment. (Indrė Lapinskaite, Silvija Vidžiūnaitė, 2020) Iraq and the Kurdistan region faced many challenges, both internal and external, directly affecting the sustainability development or economic growth, namely COVID-19.

The global epidemic has caused significant mortality and sickness, impacting people, families, communities, and civilizations. Iraq, like all other nations, is facing difficulties that necessitate the development of plans, objectives, and applications to maintain control and keep the civil liberties of generations to come to a decent existence founded on understanding and psychological well-being^[OBJ] Amid significant hurdles and expenses, Iraq has implemented new structures to enhance life for people and attain its development objectives.

The improvements seek to create solid frameworks that can manage shifts, drive growth, and effectively diversify the country's finances. The goal of all these improvements is to build solid frameworks that can promote growth and increase the financial system while^[OBJ] To address the epidemic, the United Nations structure will combine development, humanitarian, and efforts to foster peace. The goal is to mitigate significant hazards as well as weaknesses to enhance Iraqi security. The administration's attitude toward COVID-19 and path for attaining the Sustainable Development Growth Goals (SDGs). The Resident Coordinator's Office led the Socio-Economic Response Plan for Iraq (SERP), including the United Nations Development Programmed (UNDP) as a technical integrator with full involvement in the United Nations Development (UND) Programmed one of the other factors is the political factor affecting sustainable development or economic growth. Since March 23, 2023, transfers of oil from the Kurdistan Region through the Iraq-Turkey connection have been suspended. Because of suspension by the diction of the Court of Justice in Paris – based on stopping

2. Literature Review

Promoting Inclusive growth Promoting Inclusive growth refers to any economic development that generates employment possibilities and contributes to poverty reduction. It entails providing disadvantaged people with access to basic healthcare and educational services. It entails promoting equal opportunities and encouraging individuals via learning and skill growth. (OECD, 2007) The above explanation of (inclusive growth) IG assumes a direct relationship between both the economic (micro and macro) elements of development. The macro feature is consistent with the huge writing, which is based on Solow-Swan-type growth frameworks It usually ignores the significant labor reallocation across sectors that economies that are growing quickly confront. (Swan & Solow, 1956) Maintaining and achieving inclusive growth is crucial for an equal and equitable industrial transformation. To achieve an equitable transition, areas in industry transformation must take a holistic geographic strategy to growth, combining growing and strong innovative local clusters with falling sectors inside the wider region. Areas in economic development confront barriers to achieving more inclusivity. They've frequently endured slow growth, which led to little gain in financial status, and others endured lengthy periods of high joblessness. A variety of government instruments, such as better geographical links, greater incorporation of disadvantaged areas, and enhanced area satisfaction metrics, help to promote more inclusivity and transitions. An inclusive transformation necessitates increased job market inclusion for the populations most impacted by the change, including adolescents, the elderly, the long-term jobless, women, and individuals with low levels of education. (OECD, 2019) The IG (inclusive growth) strategy adopts a longer-term nature view, emphasizing profitable employment over financial redistribution as a way to raise the earnings of marginalized populations. Politicians may employ financial distribution plans in the short term to mitigate the negative effects of policy aimed at spurring economic growth on the impoverished. This is a possibility for a variety of reasons within the overall context of a particular nation. However, because transfer schemes are not an ongoing remedy and can even cause problems in the

near term, the IG approach also analyzes inclusion by successful employment. (OECD, 2008) The contextual meaning of growth favorable to the poor differs from the IG description, which aligns with the exact term. According to the actual means, growth is deemed to favor the poor if it results in actual benefits for the poor, as demonstrated by certain widely accepted indicators of being poor. (Ravallion & Chen, 2003)

Economic Growth

To assess economic growth, basically determine the scope of the country's economy. GDP, or Gross Domestic Product is one of the most frequently used metrics of the economy, and it is a useful indication of a country's economic health. GDP, or the Gross Domestic Product, is the total selling price for every final product and service created in a nation over a period of time. It contains public as well as private utilization, investments from the public and private sectors, and more exporters than importers. (Kramer, 2024) The economic expansion ratio (GDP development) is the percentage increase or decrease in actual gross domestic product that fixes the nominal gross domestic product statistic to inflationary. Actual gross domestic product is also known as inflation-adjusted gross domestic product and GDP at price constants. Overall, increased GDP benefits individuals in a particular nation because earnings rise, resulting in a greater quality of life. (BEA, 2023) However, growth in GDP as an indicator of economic power is insufficient to capture many dimensions of health. As an example, once GDP rises, inequality could increase with financial benefits concentrated amongst just a handful of people. Furthermore, GDP calculations do not take into consideration environmental quality or public goods such as the health care system. Governments seek to influence, usually stimulate, economic development through a variety of methods, including central bank lending rates, tax adjustments, and spending by governments in specified sectors such as infrastructure to increase production capacity. (FocusEconomics, 2024) Iraq is among the globe's biggest oil-dependent nations. Over the past ten years, revenues from oil have made up over ninety percent of exports of goods, eighty-five percent of the government budget, plus forty-two

percent of gross domestic product (GDP) This overwhelming reliance on oil risks the government to financial turmoil, while financial constraints limit fiscal flexibility and any potential for anti-cyclical policies. Iraq's rate of joblessness was over ten percentage points greater in the first month of 2021 than it was before COVID-19, when it was 12.7 points. Unemployment among the displaced, those who returned, female job searchers, before the pandemic independent contractors, and unauthorized workers remained high. (The World Bank Group, 2022) The CBI Policies Rate finished 2022 around 4.00%, meaning it was consistent with the finish of the 2021 figure and lower than its reading of around 6.00% ten years before. For reference, the median policy interest rate across the countries of the Middle East and North African region was 5.80 percent by the end the year of 2022. For further rate of interest information. (islandsbanki.is, 2022)

Decent Work

Decent work is defined as "staffing that safeguards the basic liberties of people in addition to the rights employees have when it comes to working illnesses, security, and compensation... while safeguarding the mental and physical health of the individual who works in every aspect of their own work. (United Nations, 2005) Decent labor is required for both the official and informal industries. It involves all types of employment, individuals, and families. In the words of the International Labour Organization (ILO), decent employment includes possibilities for efficient and fair-paying work, safety at work and social security for children, greater opportunities for individual growth and integration into society, the right to voice their worries, set up and take part in choices that impact the way they live, and equal chances and consideration for all male and female. (ILO, 2020) The International Labour Organization (ILO) is formulating a framework for communities of jobs, defined through its three constituencies, to deploy their incredible assets to generate these possibilities while also reducing and eliminating poverty. The International Labour Organization (ILO) Good Work Plan represents an equitable and cohesive programming method for achieving the goals of full and profitable employment and decent work for every individual across the worldwide, regional, national, sector-

specific, and local scales. It is built on four foundations: workplace norms and freedoms, job creation and company growth, protection of society, and social discourse. (ILC, 2001) Fiscal management, mounting debts involving emerging nations, and the conflict in Ukraine may all impede international economic development. Collectively, these challenges pose a major danger to the global financial system. In 2023, the world's real gross domestic product for every person is expected to decrease, jeopardizing job prospects, financial security, and advancements in equal pay for women and young people. Support for enterprise is also essential research on business obstacles during COVID-19 illustrates how structural and gender related barriers limit the performance of the women led firms, a pattern that is also visible in Iraq's MSME landscape (Begum and Atteigh 2022)

To achieve SDG8, we must restructure our morally insolvent banking industry to address mounting loans, economic turbulence, and trade disputes as well as promote equal compensation and decent careers for youth. (United Nations, 2023) Everyone aspires to do decent work. It is carried out under the following conditions: people have stable jobs (with sufficient financial and job advantages); the framework of social protection (labour security as well as political security) Is fully functioning and available to all; social interaction and unity are supported and pushed; and workers' rights, as outlined in the International Labor Organization ("ILO") Declaration on the Fundamental Principles and Rights at Employment or the core the International Labor Organization Agreements, are implemented, rewarded, and appreciated. (Zermina, Nadia Shah,Ayesha Kiran,Iftikhar Ahmad, 2023) Several individuals helped design the Decent Work Test as an instrument, as well as the Checking Iraq. Paulien Osse, Kea Tijdens, Leontine Bijleveld, Dirk Dragstra, Egidio G. Vaz Raposo, Paulien Osse & Lorna Ponce De Leon helped design the instrument. In 2012-13, Iftikhar Ahmad expanded the project to cover additional themes and strengthened its legal framework.Huub Bouma, Gunjan, Daniela Ceccon, a Patel have helped put the project on the internet by creating and maintaining a labor law database and connecting it with the Wage Indicator websites. Special thanks go to the Wage Indicator global labor law office (led by

Iftikhar Ahmad), which has worked on Decent Work Monitors since 2012. (David L. Blustein, Evgenia I. Lysova, and Ryan D. Duffy, 2023)

Output for worker growth rates: The increase in the manufacturing of services and goods during a specific period is known as output expansion in the field of macroeconomics. It is directly related to GDP growth with economic expansion. Gross activity or just output are other terms used to describe economic production. GDP and economic production are not the same thing. Nationwide "value-added" is measured by the gross domestic product. It is frequently expressed as the real GDP rise percentage during a given period. The actual rate of economic growth may be computed in two different methods. The real GDP may be computed by subtracting the real GDP of the previous year from the real GDP of the most recent year. Next, divide the difference with the actual GDP of the previous year. (Loren Brandt, 2008)

Informal employment prevalence in Iraq: Around two billion employees, or sixty percent of the workforce in the globe who are under fifteen years old, work in the shadowy economy at least some of the time, according to estimates from the Global Labour Organization. Over sixty percent of employees operate in informal jobs globally. The nature of unofficial employment varies greatly throughout global areas. The unregulated economy employs 68.2% of workers in Asia as well as the Pacific region and a startling 85.8% of workers in Africa. (World Economic Forum, Jun 4, 2024) The shadow economy employs more than two billion individuals. In emerging countries, women are more prevalent in uncontrolled labor. According to the Global Equality Gap Report by Global Economics which was women make less money in unofficial employment than men do. ((ILO), February 2022)

Unemployment In Iraq: The percentage of the workforce that is unemployed yet looking to find employment is referred to as jobless. In comparison to the year 2021, Iraq's joblessness rate decreased by 0.85 percent in the year 2022 to 15.32 percent. In the year 2021, the rate of joblessness in Iraq was 16.17 percent, representing a 0.42% rise from the year 2020. (kuristan24 digitalmedia media, 2024). Throughout Iraq, the poverty rate is around thirty percent, with rural regions seeing higher

percentages. Millions of individuals have been forced from their homes, both within Iraq and as refugees from nearby Syria. This has led to a reduction in jobs and an increase in the unofficial sector. (Macrotrends, 2024)

Youth engagement in education and the labor force: A country that considers suicide is a country that ignores its youth. The idea that youth will raise the coming generation of leaders is deeply entrenched. The next stages will involve some aspects where the kids weren't involved if we fail to include taking account of the youth in the current building procedure today. As an outcome, they're unsuitable for roles as its chief executive. We must involve youths in the construction processes. The economy of Iraq has shifted from being governed by a socialist one-party system to a system that is more pluralistic and resembles capitalism. Still, the framework continues to depend on prior 2003 laws and communist ideology. Although the expectations of government agencies have shifted, actuality has not. From the general population's point of view, youths and fresh graduates can still find work with government agencies. (ILO, November 2021.)

NEET in Iraq: This number displays, as a percentage of all young people in the appropriate age group, the percentage of youths by gender who are not in labor, education, or training (NEET). Adolescents who are engaged in full-time as well as part-time instruction are categorized as being in education; however, unstructured and very brief instructional activities are not. As a result, NEET youngsters may be jobless or sedentary and not pursuing further education or training. (ILO, 2003) Young people who are not employed, enrolled in school, or receiving training run the danger of being socially marginalized. These are people whose income is under the poverty level, as they lack the abilities necessary to change their financial circumstances. (International Labour Organization, (1982))

Gaps for Promoting Inclusive Economic Growth and Decent Work in Iraq

Studies that specifically examine SDG 8 indicators in Iraq are conspicuously lacking, since the majority of current research does not offer a thorough evaluation of inclusive economic growth and decent work (UNDP, 2022). Iraq's overall

economic problems are frequently the subject of current writing, although these problems are rarely linked to particular SDG 8 objectives (World Bank, 2021). The lack of current and trustworthy employment statistics, particularly for women and young people, makes it difficult to comprehend appropriate working conditions (ILO, 2023). There aren't many studies that look at how violence and instability have impeded development toward SDG 8 in various parts of Iraq (Ahmed & Karim, 2020). There is still a dearth of research on the unorganized sector, which accounts for a sizable portion of employment in the country (ILO, 2022). Economic diversification is widely mentioned, but its direct connection to SDG 8 targets is rarely examined (UNESCWA, 2021). Additionally, governmental initiatives that support equitable economic growth are not well evaluated (Salman, 2022). Regional benchmarking is challenging due to the paucity of comparative research between Iraq and comparable economies (Khalid, 2021). There is insufficient research on the long-term effects of young unemployment on sustainable development (UNICEF, 2023). Despite its significance for decent employment, there is still little research on labor rights and workplace safety (ILO, 2021). Additionally, the private sector's contribution to increasing chances for good work is underappreciated (OECD, 2020). There is little research on how social disparities impact people's ability to get steady employment (UN Women, 2022). Few studies evaluate the efficacy of government initiatives meant to increase economic participation and productivity (Hassan, 2021). SDG 8 indicators are rarely used as a systematic analytical framework in academic literature (UN, 2023). Overall, existing research currently lacks a comprehensive, data-driven study linking SDG 8 indicators to Iraq's social and economic problems (World Bank, 2022).

Drawing on the gaps and insights identified in the literature, this study aims to provide a comprehensive assessment of Iraq's progress toward Sustainable Development Goal 8. Specifically, it examines the development of economic growth by analyzing the trends in GDP and worker productivity from 2000 to 2022. The paper further evaluates employment dynamics through employment to population ratios and NEET rates, with particular emphasis on gender-based

differences. In addition, it investigates poverty and income distribution by assessing changes in working poverty and labour income as a proportion of GDP. Finally, the research aims to identify the principal challenges constraining the achievement of SDG 8 in Iraq and propose evidence-based policy recommendations to raise inclusive growth and reduce poverty.

3. Methodology

This study adopts a quantitative approach, using time series analysis and regression techniques to examine key indicators related to SDG 8, particularly employment trends, poverty levels, and economic growth in Iraq. Secondary data were obtained from World Bank and the International Labour Organization (ILO) for the period 2000 to 2022. Microsoft Excel was used for data cleaning, organization, and statistical analysis. Regression models were applied to estimate the relationship among the variables like time period and GDP, NEET, Labour Income Share as percentages of GDP, employment to population ratio etc., providing basis for understanding Iraq's progress towards SDG 8.

4. Results

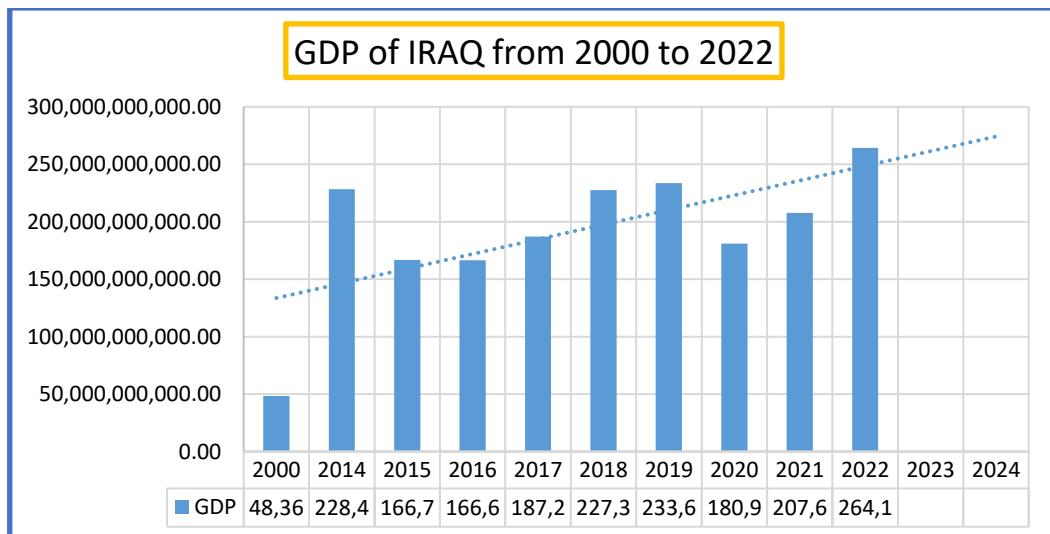


Figure 1 GDP of Iraq from 2000 to 2022

Source: Data from the World Bank (2022) was used to create the Figure

Figure 1 depicts a positive growth trend. The DGP is increasing from \$48.36 billion to \$264.18 billion. This indicates long-term economic growth, aligning with the objective of SDG 8 to promote sustainable economic growth. The sharp decline in GDP during 2015 to 2016 and 2020 highlights periods of economic contraction, followed by strong recoveries, demonstrating resilience and the potential for sustained growth despite challenges.

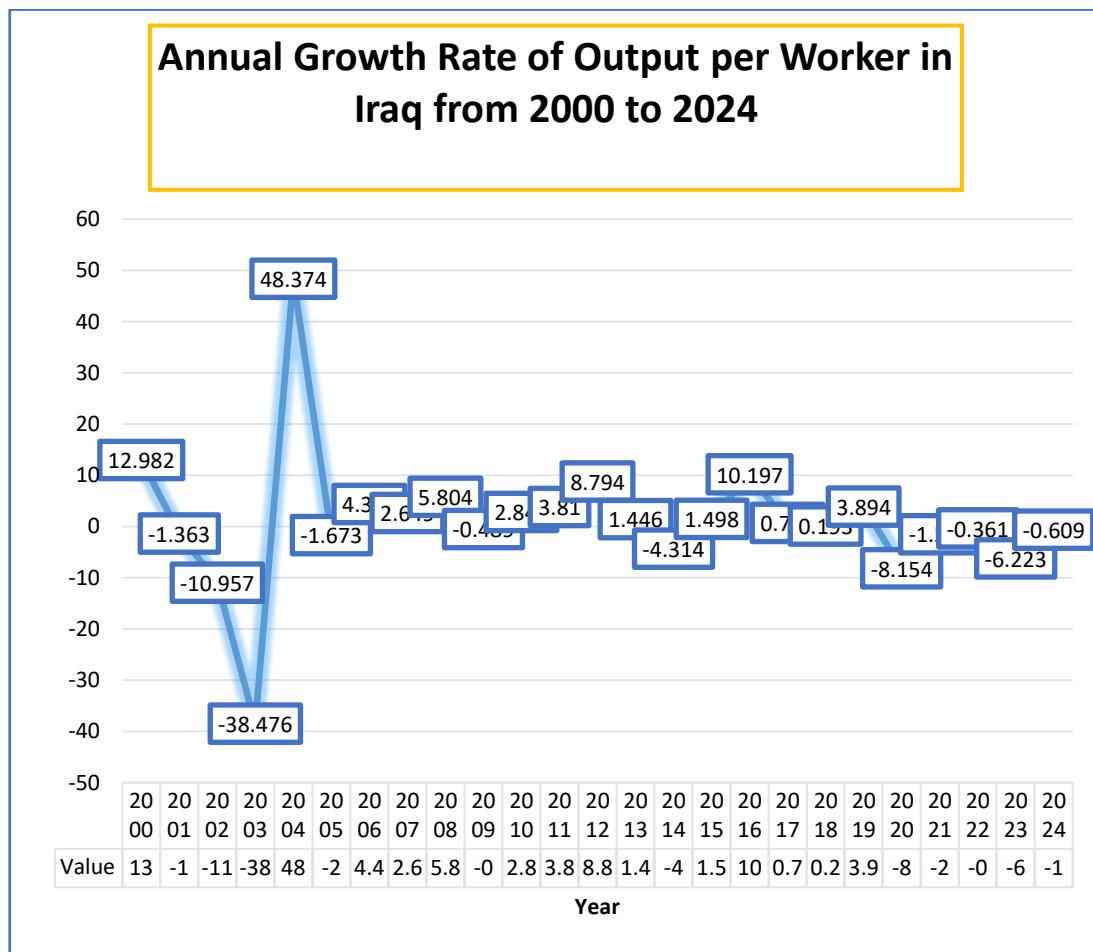


Figure 2 Annual Growth Rate of Output per Worker:

Source: Authors' own Computation using Data from ILO (Labour Force Survey, (2023)

From Figure 2, the output per worker in Iraq fluctuated significantly between 2000 and 2024, with a steep decline in 2003 followed by recovery periods. These volatile

highlights the instability in Iraq's labour productivity, likely due to internal political instability, conflict, and external economic shocks

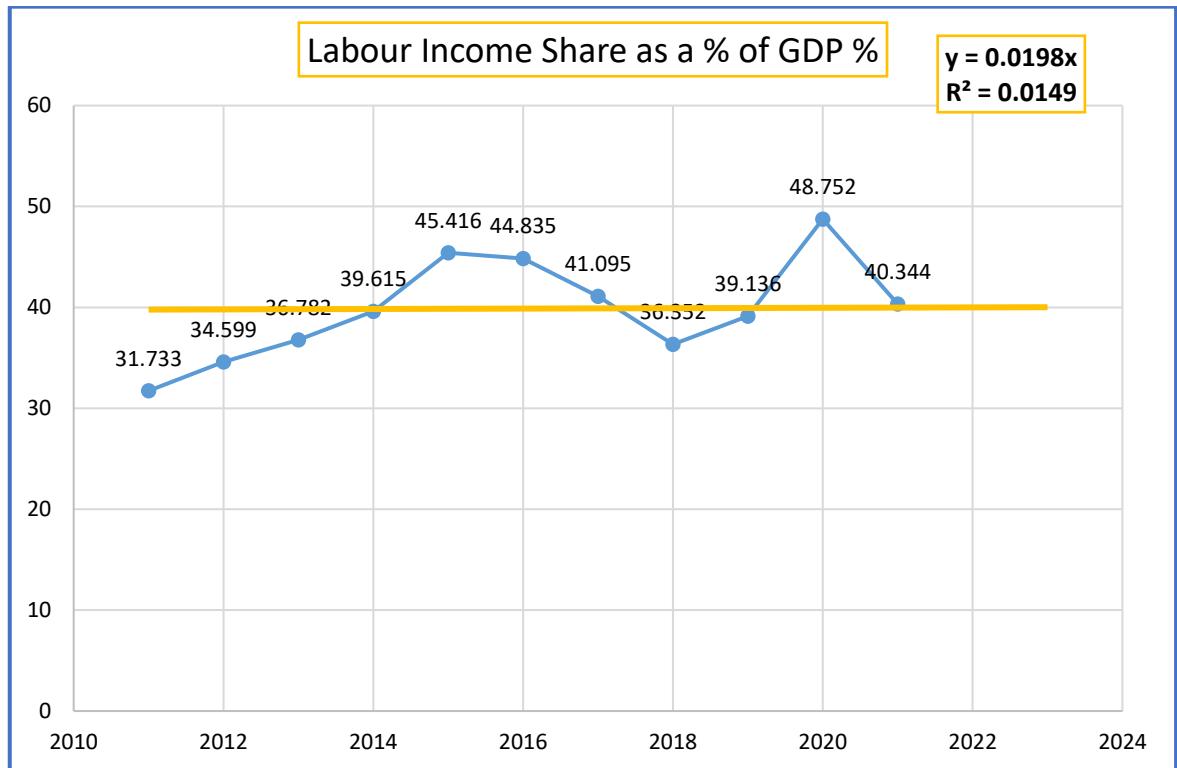


Figure 3 Labour Income Share as a % of GDP %

Source: Authors' own Computation Data from ILO (Labour Force Survey)

Figure 3, labour income share of GDP shows a fluctuating but generally increasing trend from 31.73% in 2011 to 48.75 in 2020. Though it declined slightly in 2021 to 40.3%, the upward trend suggests some improvement in income distribution to labour. However, the decline in 2021 may point to setbacks due to external pressures such as the COVID-19 pandemic.

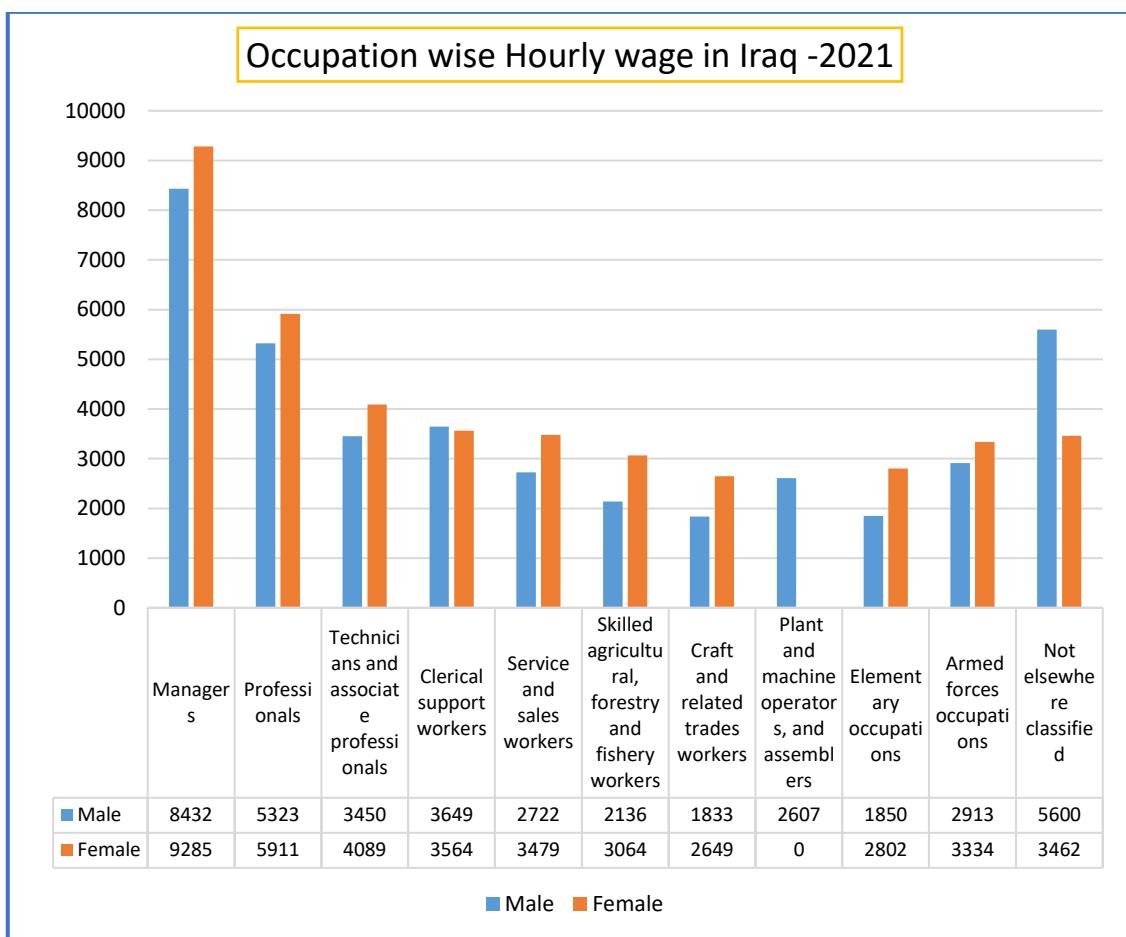


Figure 4 Occupation-wise Hourly Wage in Iraq 2021

Source: Authors' own Computation Data from ILO (Labour Force Survey)

From Figure 4, the data on hourly wages by occupation reveal significant disparities between different job categories. Managers and professionals can earn significantly higher wages compared to agricultural and trade-related sectors. It can be observed that women earn more than men in several occupational sectors.

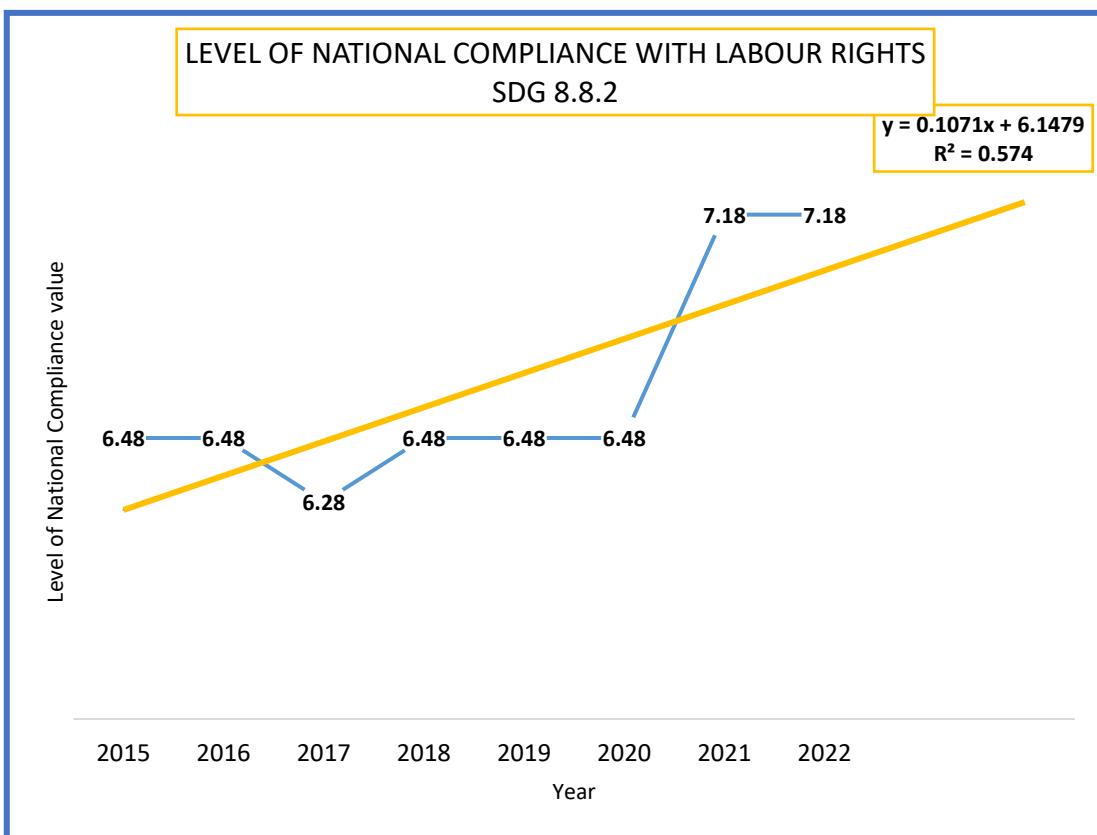


Figure 5 Level of National Compliance with Labour Rights

Source: Authors' own Computation Data from ILO Textual source

From Figure 5, the level of national compliance with labour rights in Iraq shows minimal fluctuations from 2015 to 2022, remaining mostly consistent between 6.28 and 7.18. This stability suggests that Iraq has maintained a baseline standard for labour rights compliance over the years, but the relatively low score indicates that there is still significant room for improvement in protecting labour rights.

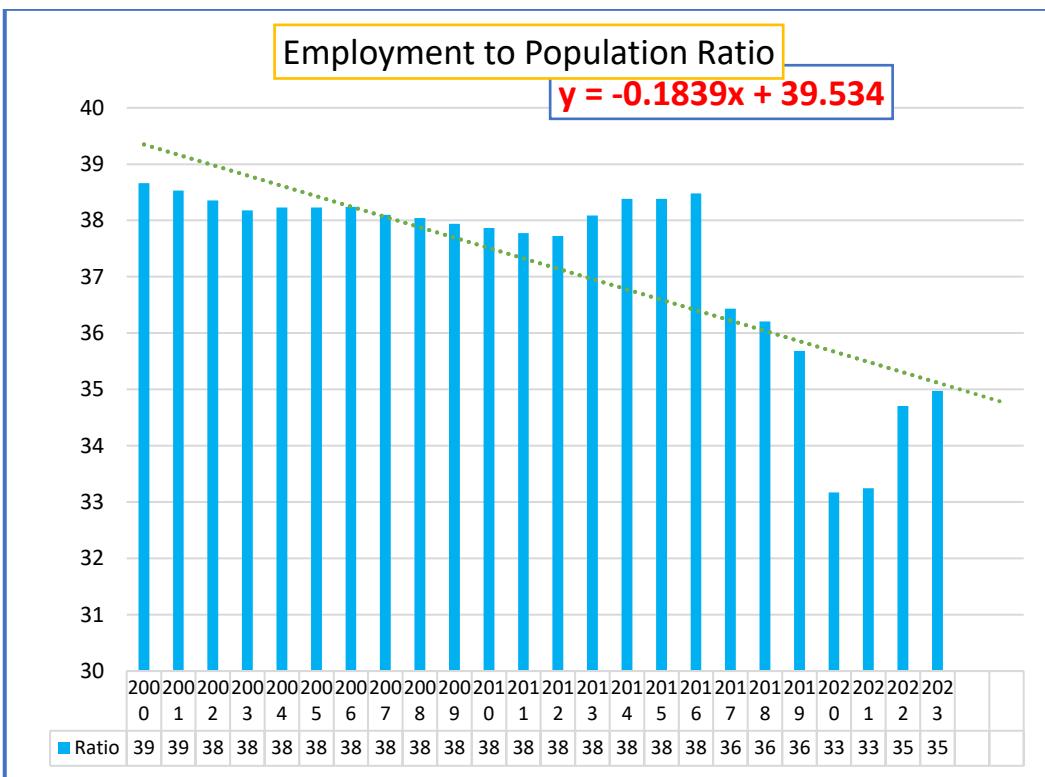


Figure 6 Employment to Population Ratio

Source: Authors' own Computation Data from ILO Modelled Estimate

From Figure 6, the employment-to-population ratio in Iraq fluctuates slightly over time, with a decline from around 38.66% in 2000 to 34.97% in 2023. This downward trend indicates that a smaller proportion of the working-age population is employed, which raises concerns about Iraq's ability to generate sufficient job opportunities to match its growing population. Factors such as economic instability, limited diversification in job sectors and social barriers may contribute to this decline.

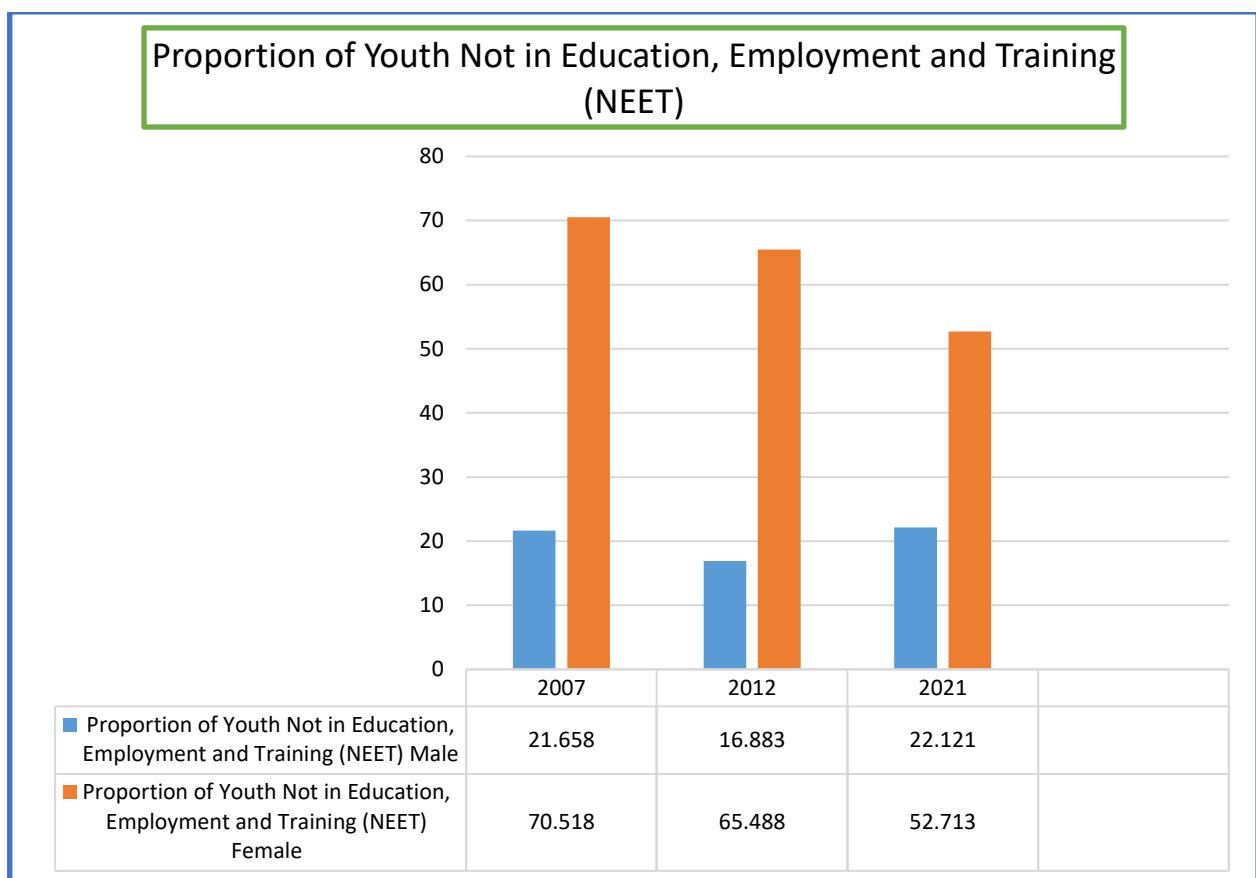


Figure 7 Proportion of Youth Not in Education, Employment, and Training (NEET)

Source: Authors' own Computation Data from ILO Modelled Estimates

From Figure 7, the NEET rates for females are alarmingly high, with 70.51% in 2007, decreasing to 52.71% in 2021. The figures for males remain significantly lower, but also concerning, rising slightly from 16.68% in 2012 to 22.12% in 2021.

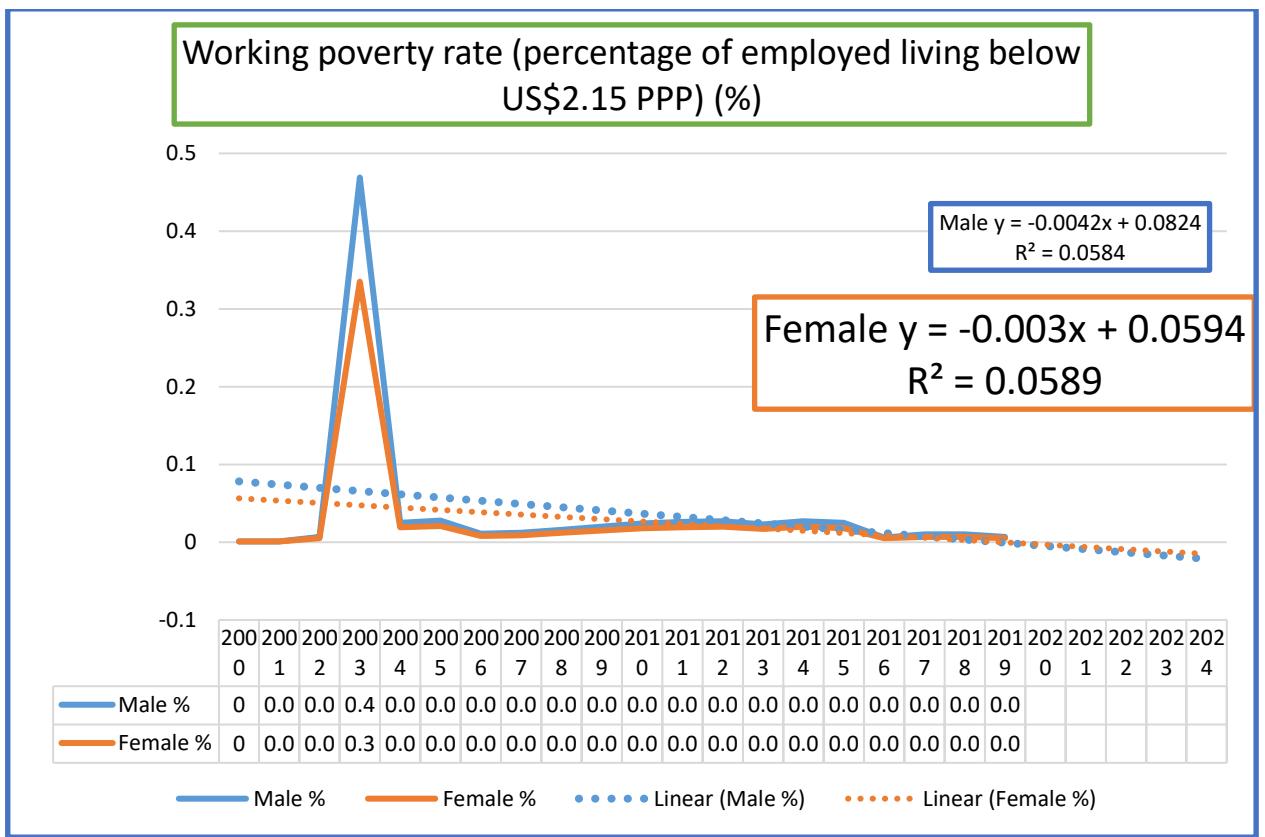


Figure 8 Working Poverty rate (% of employed living below US\$2.15 per day):

Source: Authors' own Computation Data from World Bank

From Figure 8, the working poverty rate in Iraq fluctuates significantly between 2000 and 2024, with several peaks and dips. The overall trend shows that working poverty remains a persistent issue in certain periods, particularly during economic downturns, with a notable spike during 2015 and 2016 and another around 2020.

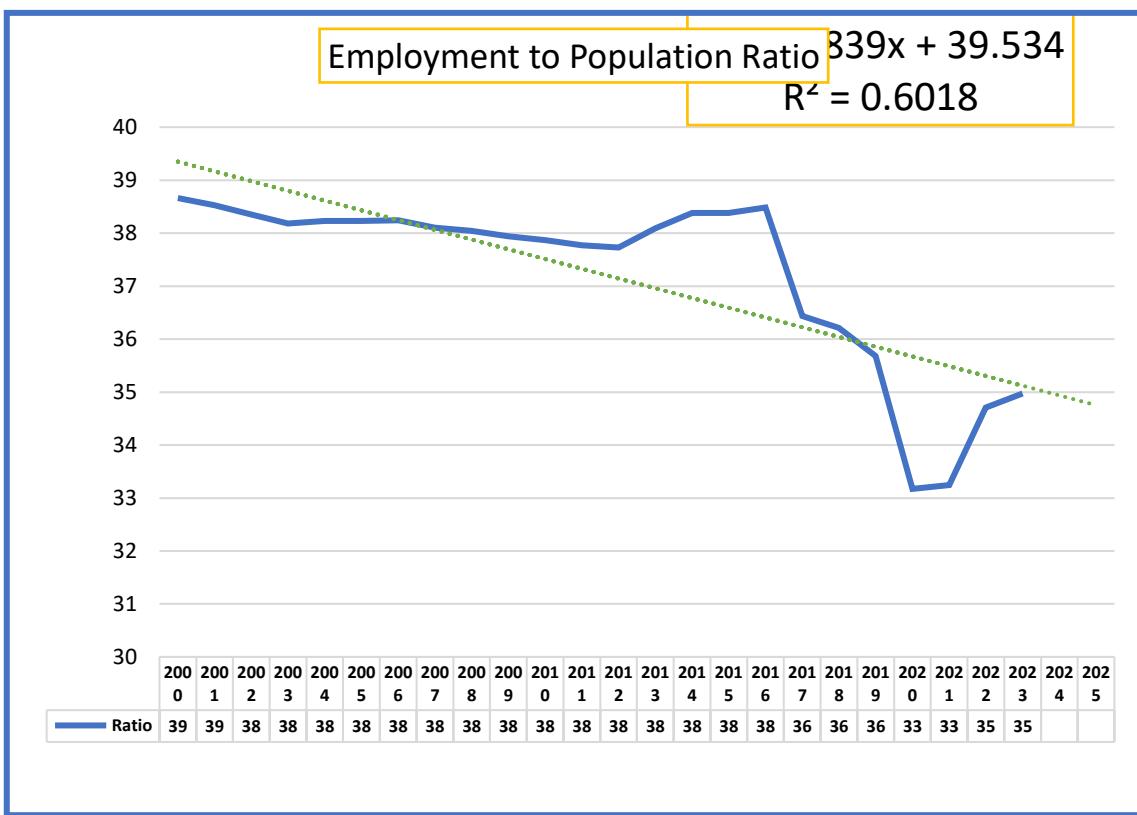


Figure 9 Employment to Population Ratio

Source: Authors' own Computation Data from ILO

From Figure 9, the employment-to-population ratio reflects the proportion of Iraq's working-age population that is employed. It shows fluctuation but remains generally stable, with a small decline from 38.66% in 2000 to 34.97% in 2023. This marginal drop indicates that Iraq is struggling to absorb its growing labour force into employment. This steady and decreasing ratio points to challenges such as stagnant job creation, structured unemployment, and potential social and economic barriers, particularly for women and youth.

5. Discussion

This study provides a multifaceted exploration of Iraq's progress towards Sustainable Development Goal 8, revealing a complex and often contradictory

picture characterized by macroeconomic growth alongside significant labour market deficiencies.

Volatile Economic Growth and the “Jobless Growth” Paradox:

The analysis of GDP data from the World Bank (2023) confirms a positive long-term trend increasing from \$48 billion in 2000 to \$264.18 billion in 2022 (Figure 1). This aligns with the economic growth objectives of SDG 8. However, this growth has been highly volatile, with sharp contractions coinciding with periods of conflict and global pandemic (World Bank 2023). Critically, this growth has not been inclusive. The decline in the employment-to-population ratio from 38.66% in 2000 to 34.97% in 2023, based on ILO Modelled Estimates (ILO, 2024), points to a fundamental disconnect. The economy is expanding without generating sufficient employment. This “jobless growth” is a primary barrier to achieving SDG 8 and can be attributed to the capital-intensive nature of the dominant oil sector, which fails to absorb the growing labour force.

The Crisis of Youth Exclusion and Gendered Barriers:

The NEET rates, sourced from ILO (2023) modelled estimates, highlight a severe inclusion crisis. As shown in Figure 7, the female NEET rate, despite improving from 70.51% in 2007 to 52.71% in 2021, remains alarmingly high. The slight increase in the male NEET rate to 22.12% in 2021 is also concerning. These figures suggest deep-seated structural and social barriers that prevent a large segment of the youth population from engaging in productive employment or skill development. The start of gender disparity indicates that specific social norms, safety concerns, and access issues disproportionately affect young women.

Mixed Signals on Decent Work: Progress Vs Stagnation:

The analysis presents a paradox regarding “Decent Work.” On one hand, the labour income shares of GDP, calculated from ILO (2023) data, shows a generally increasing trend from 2011 to 2020, suggesting a slight improvement in the distribution of income to labour (Figure 3). Furthermore, an analysis of

occupational wage data from the ILO reveals the interesting finding that women earn equal to or more than men in several professional categories, such as Managers and Professionals (Figure 4). Conversely, the level of national compliance with labour rights (SDG indicator 8.8.2) has improvement in fundamental worker protections. This stagnation, combined with significant wage disparities between high-skilled and elementary occupations, data from the ILO, shows that the quality of work remains a serious concern for a large portion of the Iraqi workforce.

1. Interpreting Trends Amidst Data Gaps and External Shocks

The volatility in worker productivity and the spikes in working poverty (World Bank) are clearly correlated with major events like the 2014-16 conflict and the COVID-19 pandemic. The regression analysis applied helps identify these relationships. However, the economic landscape of Iraq is influenced by a multitude of unobserved confounding factors such as political instability, internal displacement, and fluctuating security conditions, that our models cannot fully capture. Therefore, while we can state that economic contradictions coincided with rising poverty, the analysis is constrained in its ability to definitely establish causality.

2. Interpretations for the Regression Analysis

For the employment-to-population ratio (Figure 6), the negative coefficient suggests a gradual decline in the employment-to-population ratio over time. With an R² of 0.6018, the model explains 60.18% of the variation, indicating a moderately strong relationship between time and employment levels. For the working population, the negative coefficient shows a minimal reduction in male and female working poverty over time. Also, the model has limited explanatory power. For the level of National Compliance with Labour rights SDG 8.8.2, the positive coefficient indicates a gradual improvement in national compliance with labour rights over time. The model explains 57.4% of the variation in compliance, showing a moderate-to-strong relationship between time and improvements in labour rights compliance.

3. Conclusions

This analysis of Iraq's progress towards SDG 8 reveals a stark contradiction between macroeconomic performance and socio-economic well-being. The major conclusion is that Iraq's economic growth, as depicted by the DGP in Figure 1, has been neither inclusive nor sustainable. Despite an expanding economy, the country has failed to generate sufficient decent work opportunities, as evidenced by the declining Employment to Population Ratio (Figures 6,8, and 11). The resilience of the economy, demonstrated by recoveries after sharp downturns, is overshadowed by critical failures in the labour market. The alarmingly high and gendered NEET rates (Figure 7) signify a crisis of youth exclusion, potentially losing a generation of productive talent. Furthermore, the benefits of growth are not being equitably shared. While the Labour Income share (Figure 3), low level of labour rights compliance (Figure 5), and a volatile working poverty rate (Figure 9 indicate that the goal of "Decent Work for all" remains distant. In essence, Iraq's economy is characterized by "jobless growth". Achieving SDG 8 will require a fundamental shift from a growth-centric to a people-centric model that prioritizes job creation, youth inclusion, and labour rights.

4. Recommendations

Iraq's progress towards SDG 8 – Decent work and Economic Growth requires coordinated action in skill development, enterprise support, and labour market modernization. Evidence from the Iraqi education system shows a clear skill mismatch, as graduates often lack competencies demanded by the labour market, highlighting the need for stronger upskilling and reskilling initiatives. (Begum and Musa, 2023)

To bridge the gap between GDP growth and the declining employment-to-population ratio, the government must actively promote labor-intensive sectors such as agriculture, agro-processing, renewable energy, and tourism through targeted incentives, tax breaks, and infrastructure development. There is a need to

support SMEs and entrepreneurship to foster a vibrant private sector by simplifying business registration and creating sustainable jobs outside the oil sector.

There is a need to address the alarming NEET rates, establish a national program that guarantees every young person an offer of employment, continued education, and an apprenticeship, or a traineeship within a specified period after leaving formal education.

It is recommended to enforce and strengthen labour rights protection and build a robust data system for evidence-based policy making. There is a need for the government to partner with universities and research institutions to investigate the root causes behind the quantitative trends, such as the social and cultural factors driving high female NEET rates, to design more effective measures to reach SDG 8. Additionally, comparative labour market insights from European employment trends underline the importance of preparing workers for digital and occupational transitions through improved labour market data and future-oriented skill planning. (Begum,2023) Based on the evidences discussed above, Iraq should prioritize National upskilling and reskilling programs, target support for female entrepreneurs and should develop a modern labour market information system.

5. Limitations

While this study provides a valuable exploratory analysis, its findings must be interpreted in light of several limitations, primarily concerning data availability and methodological constraints.

1. Limitation of Data Availability and Quality: A significant challenge was the lack of consistent high-frequency data for all indicators. For some metrics, like NEET rates, data points were missing for certain years. The key constraint was the reliance on modelled estimates, which were statistical projections that may smooth over granular real-world fluctuations. The lack of granular data also limits deeper analysis, as we cannot disaggregate results by region or specific demographics, potentially masking significant sub-national inequalities.

2. Methodological Limitations

A fundamental methodological limitation is that the regression analysis can indicate correlation but cannot definitely prove causation due to unobserved confounding factors. The study is also primarily quantitative and macroeconomic in nature. The study successfully identifies what is happening but cannot fully explain the deep-rooted social, cultural, and political reasons behind these trends, which would require complementary qualitative research.

Authors Contributions

Dr. Sultana Begum, Idea generation, Abstract, Objectives, Methodology, Results and Discussions, Conclusions, Recommendations, and Limitations.

Ms. Azheen, Introduction, Review of Literature to find the Research Gap, and setting the References.

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Unlocking the Power of Decentralised Technology: Blockchain To Boost Education Quality

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Abstract

Quality education represents one of the core goals of the Sustainable Development Goals due to its role in shaping active citizens and its connection with all other goals. The importance has been confirmed by various studies published by UNESCO Educational for Sustainable Development. However, to ensure the highest quality of education, it is crucial to stay up-to-date with the latest technological advancements and seek opportunities for integration. Blockchain represents one of the most discussed technologies of the twenty-first century because of its utility and potential to revolutionise various sectors. A number of national and international bodies have produced reports identifying that blockchain use is not limited to the financial sector; on the contrary, it can be implemented in various fields, including education. Until now, most educational institutions are still managed and controlled by centralised administrative systems and entities, which have proven to be time- and cost-consuming and prone to mistakes. The rapid and ongoing technological development has imposed a duty to reevaluate and reassess the current landscape of education. This paper aims to explore the role of blockchain in education, its potential, and the challenges faced in order to suggest better recommendations to unlock the true potential of these technologies. It also sheds light on successful experiences initiated by companies. The study employs qualitative research and utilises secondary data from various reputable and recent sources, including academic journals, conferences, and reports published by internationally recognised bodies. Descriptive content analysis is used to gain accurate and comprehensive insights from existing academic work. The study will contribute to the discourse by providing methods and solutions in which blockchain can be applied to improve the current state of education, both academically and administratively. The findings will also offer additional input for legislators and policymakers to improve the education sector and enhance quality. Several suggestions are proposed to better implement blockchain in education.

Keywords: Blockchain Technology, Education Quality, Credential Verification, Decentralised Learning Management Systems (LMS), Data Security.

1. Introduction

In order to achieve sustainable societies, all members of the society must work to achieve the 17 Sustainable Development Goals (SDGs) identified by the United Nations Department of Economic and Social Affairs. Quality education represents one of the core goals due to its connections with all other goals. This was affirmed by several reports issued by UNESCO Educational for Sustainable Development (UNESCO, 2005). Quality education aimed to equip the current and prospective learners with the skills and knowledge needed to become active and responsible citizens of society and to ensure lifelong learning opportunities for all members of society. (Saini et al., 2023) Consequently, high-quality education ensures a high level of awareness on the issues at both the national and international levels, such as climate change, resource management, disaster risk reduction, human rights, and peace, and provides solution measures to address these issues with the initiative of creating a sustainable and resilient society. (Rousell & Cutter-Mackenzie-Knowles, 2020).

To attain the above-mentioned goals, it is highly important to keep up-to-date with the latest technological advancements and seek opportunities for integration to improve the current status. This was asserted by the Higher Education Sustainability Initiative (HESI). The HESI forum in 2024, titled “The Future of Higher Education for Sustainable Development”, has mentioned the importance of increasing the discussion and research on the intersection of education, innovation and sustainability, considering the role of emerging technologies, and the importance of transforming higher education to address the dynamic global landscape and unpredictable futures. Blockchain represents one of the most discussed technologies of the twenty-first century due to its utility and potential to revolutionise various sectors (Yumna et al., 2019). Blockchain was introduced by a person or a group of people called “Satoshi Nakamoto” who wrote a white paper introducing, for the first time ever, a way to transact value peer-to-peer without any third party, while ensuring security and anonymity. Since then, blockchain has

evolved and developed to be used for a variety of uses and applications (Casino et al., 2019; Gorkhali & Chowdhury, 2021). A number of national and international bodies have brought out reports identifying that blockchain use is not bounded to the financial sector; on the contrary, it can be implemented in various sectors, including the educational sector (Andoni et al., 2019).

This was also supported by various researchers who identified the promising potential of blockchain to contribute to UN Sustainable Development Goals and engender widespread change within established industries and practices (Hughes et al., 2019). As one of the main goals, education was also one of the main areas where blockchain can promise major changes. Some researchers pointed out the disruptive role of blockchain on educational norms and its role in empowering learners (Grech & Camilleri, 2017). However, a few studies have been conducted in relation to the educational field. The majority of the studies have focused on the Bitcoin blockchain, leaving behind the huge potential and area undiscussed. Blockchain, artificial intelligence, augmented reality, and other decentralised technologies, coupled with great educational content, could change the face of traditional education forever. (Chaka, 2023). Creating a decentralised education system with all its potential will be expedited by the use of emerging technologies like blockchain. (Marouan et al., 2024) (Bisht et al. 2024) The integration of blockchain into education is not without challenges despite the promise it holds.

Until this moment, the majority of educational institutes are still managed and controlled by centralised administrative bodies. Although these bodies offer quality, credibility, and experience, it is proven to be time- and cost-consuming and prone to mistakes (Choi et al., 2019). Also, the vast and continuous development in the field of technology has imposed a duty to reevaluate and reassess the current landscape of education. Hence, it has become highly vital to understand this technology and make use of it for the best of our societies. This paper aims to explore the role of blockchain in education, its potential and the challenges faced in

order to suggest better recommendations to unleash the real potential of these technologies.

2. Literature Review

2.1 Theoretical Foundations of Blockchain

Blockchain technology was presented for the first time by a person or a group of people under the name “Satoshi Nakamoto” in 2008. This technology allowed for the first time electronic transaction to happen peer-to-peer without the involvement of a third-party intermediary using the proposed virtual currency “Bitcoin”. A blockchain is a special type of DLT which consists of a long chain of connected blocks that store data and transactions in a chronological way, secured using the knowledge of cryptography and hashing functions. This system allowed the establishment of a decentralised system while maintaining transparency, integrity and trust in the system through the nodes in the system (Karafiloski & Mishev, 2017). Unlike the traditional database, blockchain operates on a decentralised system in which running, operating, securing, and archiving are not assigned to one party; rather, all the network participants have an updated copy of the entire ledger and play a role in the network (Cao et al., 2017). In blockchain, transactions are recorded, combined, and merged into a chronologically connected block with one final hashing for each using the concept of the Merkle tree introduced by Ralph Merkle (Chen et al., 2018). The figure below illustrates a simple example of blockchain.

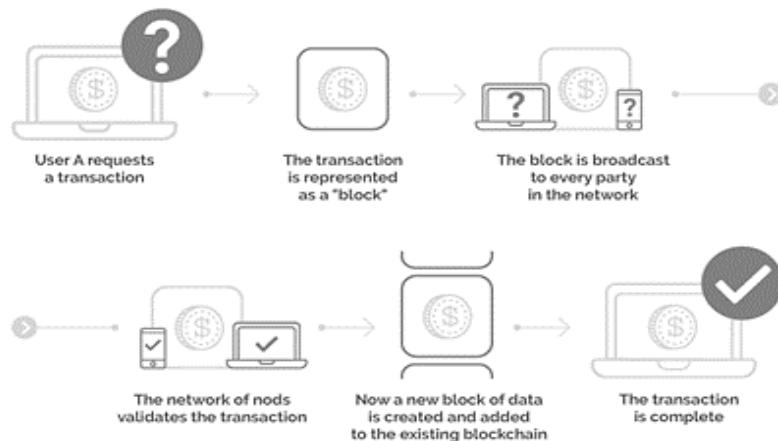


Figure 1.0 How Blockchain works

Sources: (Hassan et al., 2018)

To ensure the integrity and validity of the blockchain, cryptographic techniques and hashing functions are used. In addition to the hashing assigned to each block, the hash of the previous block is also added to the new block to ensure a valid connection between these blockchains and avoid any tampering and fraudulent activities. (Swan, 2015). The figure below shows the link between the blocks in the blockchain.

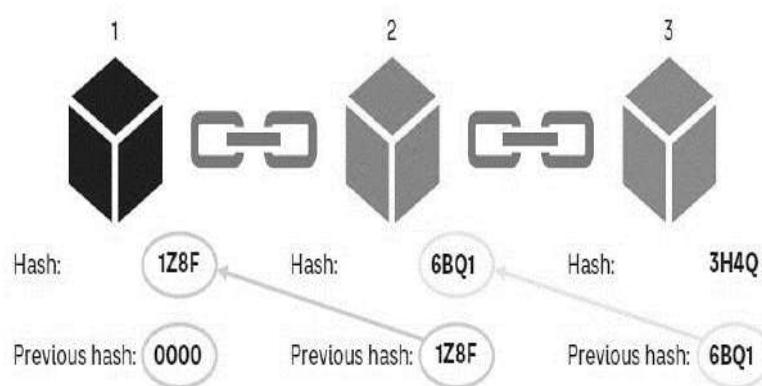


Figure 1.1 Blocks in Blockchain

Sources: This figure is adopted from Arthur D Little

Due to this robust system, blockchain enjoys immutability, in which once a transaction is added to the blockchain, it would be impossible to delete or alter it without being caught. This supervision is undertaken by the nodes in the system, which ensures the validity and authenticity through various consensus mechanisms such as proof of work and proof of stake, to name a few (Inamorato dos Santos, 2017). Each comes with its advantages and disadvantages. The consensus mechanism used in blockchain-based systems may have implications for the application performance and scalability in educational use. Each mechanism should be understood so that the most effective and efficient blockchain solutions in education can be designed. For example, PoS will need validators to hold and lock up some cryptocurrency; it might turn out to be more relevant for educational institutions since it consumes less energy compared to PoW. The figure below shows different consensus mechanisms and their differences.

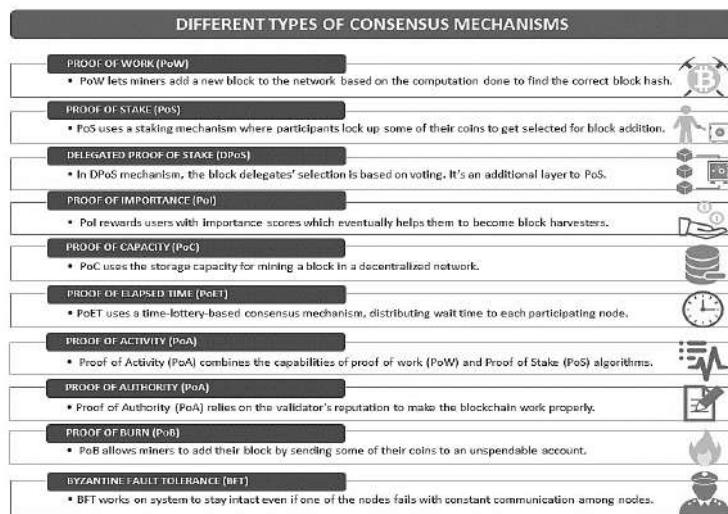


Figure 1.3 Different Types of Consensus Mechanisms

Sources: <https://www.shiksha.com/online-courses/articles/consensus-mechanisms-in-blockchain/>

The security is also extended to the accessibility of the network. Zyskind et al. (2015) noted that the cryptography knowledge implied in blockchain through the use of public and private keys ensures that only the parties who have them can enjoy access. Underwood (2016) added other advantages related to the structure of

blockchain, which minimise the potential cyber threat or single point of failure, hence, promoting security.

2.2 Lack of Knowledge of Blockchain in HEIs

When discussing the role of blockchain in education, it is highly important to consider whether it is considered in their syllabus delivered to students. This represents another issue which must be pointed out and focused on in order to produce a competent leader who possesses strong knowledge in this area. In a study conducted by Coinbase (2019), it was discovered that only 56% of the world's top 50 universities offered blockchain- and cryptocurrency-related courses. This report, however, was not a good indication, looking at the other half of the top-class universities that have yet to include blockchain in their syllabus. In addition, this report did not cover all universities worldwide, where the result could possibly be far less. This can be supported by the poll conducted by Gartner in 2023; it was found that only two per cent of the universities and other higher education institutes support blockchain teaching and learning, while eighteen per cent are considering it. This is supported by the report issued by ConsenSys (2018), which indicates that the majority of universities worldwide have yet to develop blockchain curricula. This was justified, according to the Emerging EdTech (2020) report, by the lack of awareness and understanding of the subject matter. This issue was not merely supported by the reports; rather, it was discussed comprehensively by the researchers. Several researchers discuss the lack of integration of blockchain-related courses in university curricula and the gap in knowledge about blockchain among both students and academicians. (Alammay et al., 2019; Rabah, 2017; Sharbles & Domingue, 2016; Tasatanattakool & Techapanupreeda, 2018; Hu et al., 2023). Reading the indication from both reports and academic research shows the urgent need to integrate blockchain, cryptocurrency and smart contracts into the educational curricula and raise the level of awareness through workshops and seminars. This need came along with the demand for various research, including the above-mentioned, to incorporate blockchain, smart contracts, and

cryptocurrency into the curriculum and conduct training sessions to fill in the gap in knowledge and provide a smooth and effective outcome of these integrations. (Patan et al., 2023; Salandan, 2020).

2.3 How Would Blockchain Enhance Educational Quality

Several key benefits have been discussed by the researchers worldwide, namely, data storage management, data security, system trust, global ubiquitous database and formative evaluation, which are among the most significant benefits of blockchain (Bore et al., 2017; Chen et al., 2018; Grech & Camilleri, 2017; Rooksby, 2017; Sharples & Domingue, 2016; Sharples et al., 2016; Skiba, 2017; Turkanović et al., 2018; Xu et al., 2017).

It becomes undeniable that the power of blockchain technology goes far beyond limitations and offers opportunities across multiple industries and sectors. Education is one of the areas where blockchain offers various potential. The previous method was criticised by some as being time-consuming, costly and prone to fraud. Blockchain technology came with a solution to enhance accountability, transparency, and security, as well as providing a unique solution to store, manage, verify, authenticate, and share data, information, and records of the students. Immutability, as a vital feature of blockchain, offers potential in the educational sector. Immutability ensures that the grades and other assessment results, alongside their degrees, certifications and other achievements, are kept safe and unmodifiable. This feature assists employers and HR employees in ensuring that the information provided is authentic and matches the job responsibilities and requirements. Furthermore, Mikroyannidis et al. (2018) also suggested the idea of having a smart contract powered by blockchain to offer better matches for jobs offered based on the criteria set by the employers and the qualifications of the students. This, however, can also play a role in updating, storing and verifying achievements, certificates and credentials of teaching staff as well as allowing for a detailed but reliable one.

Data security and validity is another critical area to be discussed. Traditional educational systems are based on central databases maintained by the institutions that can easily suffer data breaches or cyber-attacks. The nature of centralisation sometimes compromises the integrity of the entire system because of a single point of failure. Using blockchain will ensure that the records and certificates of the students are stored and verified forever, regardless of whether the university is closed or the system has been erased. This notion has been supported by many researchers who have seen potential in reducing the time needed and the expenses to store, check and verify any documents issued from an educational institute. In the same vein, these features can also guarantee a controlled and organised access to these records and documents through the use of a permissioned platform to handle the task of secure sharing and verification in a transparent and decentralised manner (Arenas & Fernandez, 2018; Gresch et al., 2018).

Cost efficiency is another vital benefit offered by blockchain technology; the conventional record-keeping and management of the administrative affairs of an educational institution are associated with immense costs in labour, printing, and storage. These can be significantly reduced through blockchain technology since it eliminates the use of any middlemen and eases processes (Chowdhury et al., 2019). For example, a digital diploma and certificate reduce printing and mailing costs, while automated verification procedures eliminate manual work. It may focus on academic excellence and improvement of the educational syllabus rather than keeping itself busy with unrelated and time-consuming tasks.

Additionally, data store management represents another important aspect of using blockchain. This feature allowed individuals to have ownership over all their data, credentials, certificates, accreditations, and other important related documents for their lifetime without the need for a trusted party, hence promoting self-sovereignty and enhancing lifelong learning through keeping them updated and aware about their learning process and all the related documents and data. Another area that deserves proper attention is the privacy that blockchain can offer. This blockchain stores that data in a secure and hashed block using the knowledge of cryptography

and hashing functions. This privacy is enhanced by the extra layer added through the identification process using the public and private keys, thus blocking unauthorised access (Filvá et al., 2018).

It is also essential to mention the importance of using blockchain and smart contracts to arrange some of the financial and administrative aspects of university work. Most of the administrative tasks in traditional educational systems are manual and labour-intensive, involving bundles of paperwork and human intervention. It is thus prone to errors and delays. Blockchain automates most of these processes through smart contracts—self-executing contracts with terms directly written into lines of code (Cong & He, 2019). They can facilitate tasks such as course registration, fee payments, and issuance of certificates with minimal administrative burdens, improving efficiency tremendously (Grech & Camilleri, 2017).

Also, another unique method has been implemented to enhance learners' engagement. Coinbase provides courses in which a few cryptocurrencies will be awarded to you at the end of the courses, providing a unique method of enhancement to the learning process through an educational process. Others also proposed a blockchain-based application that provides rewards in the form of cryptocurrencies to the best-performing learner based on set criteria (Zhong et al., 2018). In addition to the ones mentioned above, various other potentials and benefits are proposed by blockchain, such as the potential to have a global ubiquitous database in which a unified system is applied worldwide. This has been approved by a report published by UNESCO and Commonwealth Learning (UNESCO, 2022).

2.4 Current Landscape and Trends

The adoption of blockchain in the area of education varies in its approach. While some were initiated by universities and higher education institutes (HEIs), others were presented by other companies and service providers. A recent report published in 2024 titled “The Blockchain in Education Market Report 2024” has stated that the global blockchain in

education market size is expected to expand at a CAGR of 43.94% during the forecast period, reaching USD 1055.98 million by 2027 after being valued at USD 118.73 million in 2021. This huge increase reflects the growing demand for implementing technologies to enhance the educational process. It was also supported by another survey published by the nonprofit organisation Education Blockchain Initiative, which showed that more than sixty per cent of the education leaders assert that blockchain will play a significant role in education.

A number of related projects or applications powered by blockchain are operating. Echolink is an internationally recognised blockchain network that securely maintains authenticated credentials, skills, and work experience in an encrypted and immutable format. All information is inputted by the authoritative institutions, therefore ensuring the credibility of such material. Echolink has formed a corporate alliance with Microsoft to provide cloud services for blockchain applications on the Azure platform. (Bore et al., 2017)

A multifunctional blockchain platform called Disciplina, developed by Teach Me Please, generates and retains authenticated personal profiles pertaining to academic and professional records. It facilitates recruitment services by offering digital curriculum vitae of students created during their academic careers, together with evidence of their legitimacy (Kuvshinov et al., 2018). Open Certificates, an application created by attorneys, uses Ethereum smart contracts to provide block-proof status to educational certificates (Hari & Lakshman, 2016).

The application wave has seen participation from universities and colleges. For instance, Massachusetts Institute of Technology (MIT) was also a leader in this field by introducing the MIT blockchain-based digital platform, which allows the graduate students, through a special wallet, to store, verify and share their educational and academic records in a trustless and secure manner. Similarly, the University of Nicosia used blockchain technology to manage the records of the students who received certificates through the courses offered by the university on the MOOC platform. (Gräther et al., 2018).

Furthermore, there exist multiple case studies that illustrate the practical implementation and significance of blockchain technology in the field of education. An example of such an institution is Holberton School of Software Engineering, which applies blockchain technology to generate and authenticate academic diplomas. Once implemented, this system ultimately decreased the time and expense required to verify credentials while simultaneously enhancing the security and authentication of academic records (Chowdhury et al., 2019). Another prominent instance is the Sony Global Education and IBM collaboration, which has developed a blockchain-based platform for securing and sharing student records. It is intended to enable students to have an all-inclusive, tamper-proof recording of all their academic achievements, which they can share with their employers and other academic institutions (Sony Global Education, 2016). In addition to an endless series of isolated cases, national initiatives are emerging. For example, the Malaysian Education Ministry introduced a Blockchain E-Skrol application for combating the flourishing menace of fake degrees. It enables employers and any other interested party to vet the authenticity of academic certificates issued by all Malaysian universities.

Another service worth mentioning was ODEM, an educational online platform that utilises blockchain technology to offer students cost-effective academic courses that can be customised to meet their individual requirements. Students can communicate directly with academic experts and agree on the optimum learning environment. The platform utilises smart contracts and blockchain-enabled payment systems to motivate and compensate students for their academic achievements, as well as to reward instructors for creating superior courses. The blockchain stores all of the certifications that students have earned. Consequently, these documents can be readily accessed and shared on social media platforms and used as substantiation in digital curricula vitae. In addition, BitDegree is another online education company that focuses on technology and incorporates blockchain ledgers and tokenisation. In order to facilitate the acquisition of knowledge about digital ledger technology and the subsequent pursuit of a career in blockchain, the organisation provides

online courses, including "Cryptocurrency for Dummies: Ethereum vs Bitcoin and Much More". The website promotes education by providing tokenised scholarships upon course completion or achievement of listed objectives.

2.5 Implementing Decentralised Learning Management Systems (LMS)

This section reviews blockchain-based LMS structures, their advantages, case studies of successful implementation, and challenges and solutions while adopting them.

2.5.1 Architecture of Blockchain-Based LMS

A decentralised LMS is a system that is powered by blockchain technology to offer a secure, transparent, decentralised, immutable ledger for managing, issuing, archiving, and verifying educational processes, including but not limited to student records and certificates and other related documents, and ease the administrative and financial procedures. Unlike the centralised conventional system, which is centred upon the existence of centralised servers, Blockchain as a learning management system would provide a distributed network wherein each node keeps a copy of the whole ledger. This distributed and decentralised architecture ensures that the data is not controlled or manipulated by a single entity, enhancing security and trust as well as minimising the cost and time needed.

In terms of privacy and security, cryptographic techniques in blockchain ensure secure encryption and an immutable storage of students' information, which reduces the chances of data breaches and unauthorised access. Decentralisation eliminates any threats of a single point of failure and makes the system robust against cyber threats. Also, implementing this platform would guarantee transparency and accountability, as mentioned above. Chen et al. (2018) mentioned that the transparency within blockchain technology allows all relevant stakeholders, such as students, educators, and administrators, to see across all transactions and records.

This, in turn, establishes trust due to accountability, as all actions are recorded on the blockchain and can be subject to audit.

In the same vein, the administrative procedures in education could be extensive and prone to mistakes. The increase in the number of students would also affect the time and cost of the service provided. Implementing a decentralised learning management system in the educational institutes ensures that all the procedures to be followed by the side of students or the administrative tasks are automated, verified and stored electronically in an unmodifiable ledger. Blockchain LMS can be used to automate various tasks such as enrolment, payments, adding courses, grading, and certification. (Grech & Camilleri, 2017). This can be used by the use of smart contracts built on top of the blockchain technology to provide a secure mechanism and database. Smart contracts are self-executable upon predefined conditions, reducing manual intervention and administrative overheads (Tapscott & Tapscott, 2016). Following this approach can reduce the stress upon the students and educational staff and align their focus back to academic excellence and students' welfare. Additionally, using Blockchain LMS facilitates seamless data sharing and interoperability within different institutions locally and internationally and between educational institutes and government agencies. Students can move with their transcripts from one institution to another, from one country to another, without loss or manipulation of data (Sharples & Domingue, 2016).

Experimental deployments of blockchain-based LMS within various educational institutions and organisations manifest a number of practical benefits brought about by this technology. For example, the Open University in the UK explored the use of blockchain technology to help create a decentralised education ecosystem. Their platform enables secure storage and sharing of academic credentials, enhancing the overall learning experience.

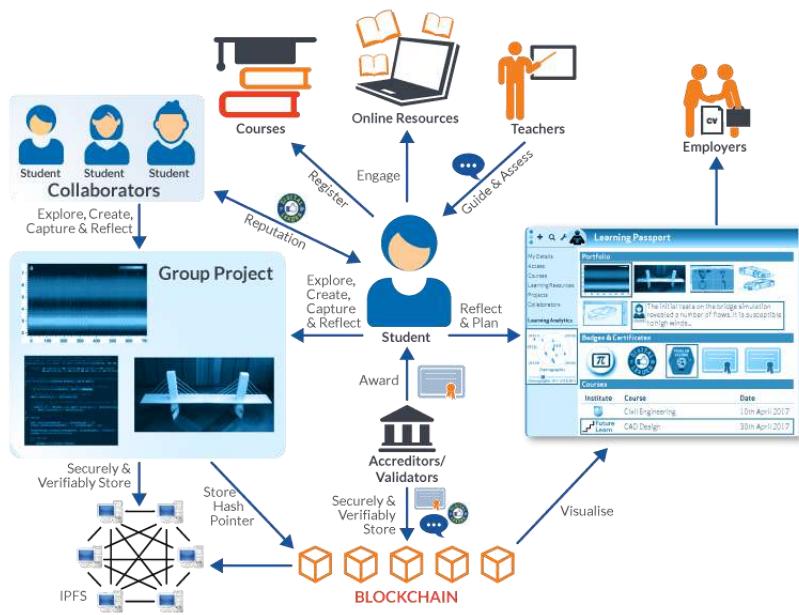


Figure 4. Using Blockchain in Education published by Open University

Another case that deserves mentioning is the initiative issued by MIT Media Lab when they released the first ecosystem designed for the purpose of creating, sharing, and verifying blockchain-based educational certificates. This blockchain registers a digital certificate and protects it with a cryptographic signature and hashing value, making it immutable and tamper-proof. This system, according to MIT, can be used as “an international network of universities to develop a shared system for digital academic credentials.” (MIT Media Lab, 2025) This vastly smoothed out the verification process and thus enhanced the trusting or validating of academic credentials on the part of other employers and institutions.

2.5.2 Challenges and Solutions in Decentralized LMS

Despite the various benefits provided by blockchain in education and the successful implementation by several institutions, there are still some challenges that need to be addressed to ensure error-free implementation and that the educational institute receives the ultimate benefits with the fewest issues and challenges possible.

2.5.3 Technical Challenges and Scalability Issues

Scalability is one of the cores and basic technical challenges associated with the use of blockchain technology. When the number of transactions is higher, the blockchain becomes overloaded, therefore slowing down the transaction time and increasing the costs associated with such transactions. This problem stands out in an educational setting, as most institutions process a huge amount of data and various transactions on a daily basis. Other solutions are being developed to ensure the sustainability and practicality of blockchain and improve issues of scalability and save time and cost, including sharding the network, off-chain transactions updated on blockchain, and layer 2 protocols. Another technical challenge is related to the energy consumption that some of the blockchain consensus mechanisms require, especially proof of work. This consensus mechanism requires high computational power, hence high energy usage, which becomes expensive and is also unsustainable in environmental terms. However, scholars and experts suggested alternative mechanisms, such as proof of stake and delegated proof of stake alternatives, as more energy-efficient solutions to this problem (Kiayias et al., 2017).

2.5.4 Regulatory and Compliance Issues

Identifying and discussing the legal challenges associated with the use and adoption of blockchain technology in education can be challenging. However, it is vital to address the major areas of concern that might violate the rights of people or the law applied. Data privacy represents one of the major areas of concern. Immutability and transparency might conflict with the main principle under the privacy laws, such as “the right to be forgotten”, as well as his right to keep his records, performance, attendance record and other information secret. The General Data Protection Regulation (GDPR) requires that individuals have the right to be forgotten, something that goes directly against blockchain's immutability principle (Finck, 2018). Thereafter, the educational institutions should ensure that they properly navigate such a landscape. A solution that balances transparency and data

protection could be more privacy-oriented blockchain solutions, such as zero-knowledge proofs (Zyskind et al., 2015). This solution allows the students to verify some information without the need to expose private information without their approval.

Another issue that may arise from implementing blockchain, whether by an institution or at an international level, is the jurisdictional issue. Wright and De Filippi (2015) added that assigning the legal jurisdiction is a tricky task, especially if the university is offering services internationally or the physical location of the entity storing the information is different from the student. Also, Grech & Camilleri (2017) added that the lack of standard regulation over blockchain technology has resulted in a lot of uncertainty and possible legal risks for institutions. This issue requires an international unified law to provide an international standard to facilitate the use of blockchain internationally. Another issue that deserves in-depth analysis is the legal status of blockchain and smart contracts worldwide. Most of the jurisdictions are yet to regulate or clarify the legality of blockchain and smart contracts. Without a specific law that recognises these methods, many traditional institutions, whether local or international, might reject using or accepting these networks (Smolenski, 2021). This discussion is extended to the smart contracts and their validity in case any dispute arises, especially issues related to enforceability, dispute resolution, interpretation, and validity of the record, to name a few (Sklaroff, 2017). Also, the lack of regulatory guidance might also pose uncertainty to the governance method over the decentralised network. This means that the responsibility for errors or any data breaches must be identified to ensure accountability (De Filippi & Hassan, 2018).

2.5.5 Other Challenges Facing the Implementation of a Blockchain LMS

The adoption and implementation of blockchain technology in developing the current traditional learning management system requires a paradigm shift in the entire process, especially related to the way the data and procedures are managed at the institution. This transformation, associated with the lack of awareness and

technical wherewithal, can be faced with resistance from the stakeholders who are familiar with the traditional method and systems. These can be bridged by extensive training and educational programmes. According to Grech and Camilleri (2017), the need to invest in initiatives aimed at creating awareness and a better understanding of blockchain technology for each set of stakeholders is very high. Pilot projects and case studies, which could be used to demonstrate some of the tangible benefits of blockchain, would be very helpful in reducing fears and paving the way toward acceptance. This can also play a key role in solving the interoperability issue with the majority of the existing education systems. These old systems are mostly not designed to work with blockchain. However, raising awareness about blockchain makes a huge difference as to the importance of this transition associated with common standards and protocols of blockchain integration. This definitely could help in an easier transition and compatibility with existing digital technologies (Sharples & Domingue, 2016). However, these efforts require cooperation between educational institutions, technology providers, and standardising bodies. Additionally, the financial constraints must also be discussed as one of the challenges that requires further focus. Implementation of blockchain technology can be resource-intensive. The cost of developing, deploying, and especially maintaining blockchain solutions may be unbearable for most educational institutions, particularly those that have a very minimal budget. To temper these limitations, institutions can consider partnerships and collaborations with blockchain technology providers and other education providers. This, according to Tapscott & Tapscott (2016), will help in the sharing of resources and expertise to bring down costs and derive more efficient implementations. The support can also be received by the government authorities through blockchain initiatives. These initiatives will provide encouragement for these bodies to ensure a smoother transition.

2.5.6 The Potential to Integrate Blockchain With Other Emerging Technologies

Alongside blockchain technology, the world saw various other technologies with high potential in multiple sectors, including the educational one. The fusion of blockchain technology with these technologies, such as artificial intelligence, IoT, and big data analytics, holds a lot of promise for the future in the educational sector. Firstly, the integration between artificial intelligence and blockchain has a huge potential to strengthen data security through its algorithm. Many scholars have discussed the role of AI in detecting threats in real time and identifying any anomalous patterns and predicting potential breaches, which in return enhance the authenticity of education data (Casino et al., 2019; Rajawat et al., 2022). This integration also helps in providing more accurate and personalised learning experiences. This means that AI algorithms can be run on blockchain-stored data to return tailored learning material and adaptivity in learning pathways, depending on the performance and inclinations of students individually towards certain concepts (Chen et al., 2018). On the administrative side, AI can help further in automation and make blockchain-based systems even more efficient by offering automation to certain tasks such as record keeping, data verification and authentication, certification, issuing letters, replying to emails, and registration, among others (Alammayy et al., 2019). The Internet of Things (IoT) is also an area that deserves further discussion. It has been defined as “a global network of machines and devices that interact with each other, often referred to as the Internet of Everything or the Industrial Internet” (Lee & Lee, 2015). The Internet of Things involves various devices which are embedded in objects or other devices to send and receive data autonomously (Berte, 2018). Integration of IoT with blockchain can enhance the management of the physical educational resources. In this light, IoT devices can keep monitoring the usage and maintenance of respective equipment and facilities, while blockchain ensures that this data is recorded securely and transparently. In this way, according to Salha (2019), educational institutions will be more effective in resource and maintenance management.

2.6 Finding and Recommendation

Scholars from various areas of science have discussed the role of blockchain in changing the future of many sectors. Education was one of the hot topics for discussion among them, discussing the benefits and possible drawbacks. The article has demonstrated the importance of increasing the knowledge of blockchain, smart contracts and related underlying technology in order to be able to implement it in the education field. This includes academic and non-academic staff as well as students, as both users and administrators. This will allow for a better and safer transition when all the stakeholders are backed by a comprehensive knowledge in this mentioned area. For instance, a lack of knowledge in the different characteristics, types and consensus mechanisms of the blockchain might lead to a different result than intended. Blockchain is found to provide a valuable addition to the educational institute, offering solutions to improve data storage management, security and validity; a faster credential verification process; a unified and global system; lower the chances of fraud and data manipulation; promote lifelong learning; boost the efficiency in terms of time and money required to do academic and administrative tasks; and provide a more robust system to protect the primary through controlled access. All the features are derived from the novel characteristics of blockchain technology. All the above-mentioned features result in another sub-benefit, whether to the educational institute or to other external bodies such as other schools, universities, ministries, and even companies looking for a job.

Blockchain also opens the chance to change the landscape of the learning management system through integration, which might assist the schools or universities' lecturers to focus more on academic excellence. Several solutions and experiments from schools and universities, which were mentioned before, demonstrate the possibility of expanding these experiences and provide a complete and overall system, rather than using the system for a specific purpose. However, the implementation of such a system is prone to various legal and technical challenges that need to be addressed, especially the legal issues that might reflect

on the status and the trust in the system, such as privacy concerns and jurisdictional issues. The second issue is the lack of awareness that might fail the transition to a blockchain system and encourage all the stakeholders to take a step to create a unified system to manage, process, store, verify and authenticate any academic and educational records. It is also encouraging for future researchers to focus on the issues and potential of integrating the related technologies in blockchain.

Hence, to better implement blockchain technology and make the ultimate use of this technology, the researcher highly encourages giving attention and importance to the following recommendations:

1. There is a need for clear and consistent regulations that would support the integration of blockchain, ensuring data protection and compliance.
2. Comprehensive training programmes can help develop blockchain literacy among educators, administrators, and students themselves for easier adaptation.
3. Public-private partnership or collaboration between education institutions, technology providers, and policymakers is needed to really drive blockchain adoption and innovation.
4. Continued investments in blockchain research and development will further technological advancements and reveal new applications in education.
5. Conduct more research on the impact of the emerging technologies and their impact on education, especially any updates in the field of blockchain, to shorten the knowledge gap.

2.7 Future research

Future researchers must clearly analyse the potential advantages and risks associated with the integration of blockchain and other emerging technologies in the field of education. It is also advisable for future researchers to conduct a study in the Middle East region through collecting primary and secondary data to evaluate the countries with the most use of blockchain and provide comparative studies with

other countries following the traditional centralised method. Legal and technical research is also highly needed to provide a clear legal framework for these technologies and provide better and more suitable solutions to implement in education.

2.8 Conclusion

As all the nations worldwide seek to achieve sustainability in all aspects through the vision drawn by the United Nations, quality education is a vital goal to establish a strong society. Part of achieving such a society is through innovation and keeping pace with the latest technological developments in the field. Blockchain technology has emerged as a strong tool with the potential to appreciably improve both the quality and efficiency of educational systems. This paper aimed to explore various aspects related to using blockchain and its related technology to promote status for the educational sector. The paper has demonstrated the benefits and the areas where integration with other technologies is possible. It also highlighted the risks associated and proposed a few solutions that might minimise the impact and provide assistance in this lengthy process of transformation. To conclude, it is highly important to be aware of this technology, especially in our region, in order not to fall far behind other countries.

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Turkey–United States Conflict After 2012’s Syrian Civil War: NATO’s Institutional Crisis and Diverging Threat Perceptions

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Abstract

This paper examines the post-2012 conflict between the United States and Turkey over Syria through a comparative analysis that centres NATO’s institutional crisis as a key explanatory factor. Drawing on neorealist theory, the study argues that divergent threat perceptions and strategic priorities—U.S. emphasis on counterterrorism and global stability versus Turkey’s focus on territorial integrity and the Kurdish threat—were amplified by a perceived decline in NATO cohesion and U.S. engagement in the Middle East. Methodologically, the paper compares policy decisions, military engagements, and diplomatic initiatives by the two states, and situates these within alliance dynamics and external developments such as the U.S. strategic retrenchment and the Astana process. The main research question of the study is how we can explain the conflict between the United States and Turkey over Syria after 2012, and to what extent did NATO’s institutional crisis shape or amplify that conflict? The findings show that NATO’s uneven response and the U.S. pivot away from decisive regional leadership reduced Ankara’s confidence in the alliance, prompting unilateral actions and closer tactical cooperation with non-NATO actors. The study concludes that NATO’s institutional crisis did not cause the conflict alone but functioned as a critical amplifier that shaped how the U.S. and Turkey prioritized competing security objectives in Syria. The paper offers policy-relevant implications for alliance management and crisis-resolution mechanisms.

Keywords: *NATO; Syrian Conflict; U.S. foreign Policy; International Security; Turkey; Syrian Kurds*

1. Introduction

The alliance between the United States and Turkey has long been anchored within the framework of NATO, enabling both states to navigate various global and regional challenges (Akyesilmen, Tinker, & Ishmeal, 2020). However, the outbreak

of the Syrian Civil War after 2011 revealed significant fractures within this partnership. Diverging threat perceptions and strategic interests—U.S. emphasis on counterterrorism and global stability versus Turkey’s prioritization of territorial integrity and the Kurdish question—placed the two allies on opposing sides of the conflict (Blanchard, 2022; Tank, 2021).

This divergence extended beyond bilateral relations, raising broader questions about NATO’s cohesion as a security institution. Whereas earlier cooperation, such as President Obama’s 2009 visit to Turkey, had projected an image of a model alliance (White House, 2009), the Syrian conflict revealed the limits of this partnership. The U.S. decision to partner with Kurdish forces to combat ISIS clashed directly with Turkey’s national security priorities, while NATO’s inability to present a unified stance deepened Ankara’s doubts about the alliance’s reliability (Ratney, 2019).

The central argument of this paper is that the conflict between the U.S. and Turkey in Syria after 2012 can best be understood when NATO’s institutional crisis is considered as an independent variable. The diminishing U.S. role in the Middle East, combined with NATO’s internal fragmentation, left Turkey perceiving the alliance as insufficient in addressing its urgent security concerns. In response, Ankara increasingly sought unilateral measures and closer coordination with alternative power structures such as Russia and Iran.

This paper therefore investigates how NATO’s weakening cohesion amplified divergent national priorities within the alliance. Using neorealism as a theoretical framework, the study compares U.S. and Turkish approaches to Syria, highlighting how the Syrian Civil War exposed both the fragility of alliance politics and the enduring salience of national security interests.

2. Theoretical Framework: Neorealism Perspective on the Syrian Crisis and NATO

Neorealism, as a theoretical framework in international relations, offers a valuable lens for understanding the dynamics of the Syrian crisis and the divergent stances within NATO. Grounded in the notion that the international system is anarchic and states act primarily to ensure their survival, neorealism emphasizes the role of power, threat perception, and strategic interests in shaping state behavior (Keohane, 1988). These principles are evident in NATO's response to the Syrian crisis and the conflicting positions of the U.S. and Turkey.

From a neorealist perspective, NATO's limited engagement in Syria can be attributed to the absence of a direct existential threat to the alliance as a whole. While Turkey, a NATO member, faced immediate regional security concerns, the U.S. and European members prioritized global stability and counterterrorism (Phillips, 2022). This divergence reflects the neorealist emphasis on self-help, where individual states pursue their security objectives based on their unique threat perceptions.

The U.S. approach aligns with neorealism's focus on power balancing. By partnering with Kurdish forces to combat ISIS, Washington sought to counter a non-state actor that posed a global threat to U.S. interests. However, this strategy clashed with Turkey's priorities, which were centered on maintaining territorial integrity and countering perceived threats from Kurdish groups. This divergence is the ideal example of the neorealist perspective, particularly the concept of competing national interests within alliances (Ratney, 2019).

Turkey's actions, such as the unilateral military interventions in Syria and also seeking further cooperation with Russia and Iran in the Astana talks (Bonsey, 2017), are showing the relevance of neorealism better and clearer. Faced with what it perceived as insufficient NATO support, Turkey started to turn to an alternative power structure in order to safeguard their own security. This strategic pivot by Turkey cannot be fully understood without reference to the diminishing role of the

United States in the Middle East. The U.S. “pivot to Asia” strategy, combined with its selective engagement in Syria, signaled to Ankara that Washington was no longer willing to shoulder the same regional security responsibilities as in previous decades (Chollet, 2016; Karlin, 2018). As a result, NATO itself entered a period of institutional crisis: on the one hand, it retained the framework of collective defense, but on the other hand it lacked the cohesion and leadership necessary to respond decisively to the Syrian conflict. Turkey’s outreach to Russia and Iran through the Astana process was therefore not only a reaction to insufficient NATO support but also a reflection of the broader perception that the U.S. was retrenching from the Middle East, leaving NATO fragmented and unreliable in the eyes of its frontline member. Such a behavior clearly mirrors the neorealism principles that even within alliances, states are acting in ways that maximize their relative power and security in an anarchic international system.

Neorealism also sheds light on NATO’s broader challenges in the Syrian crisis. The alliance was unable to show a unified front; this inability highlights the difficulty of aligning diverse and different national interests within a collective security framework. Despite the fact that NATO is an institution that aims to promote collective defense. However, Due to the anarchic nature of the international system and the self-help tendencies if the members of the system usually lead to fragmented responded to complex crises such as the Syrian one

In summary, the Syrian crisis is illustrating the enduring relevance of neorealism particularly through explaining behavior of the states and alliance dynamics. By emphasizing power, threat perception, and strategic interests, neorealism provides a coherent framework for analyzing the actions of NATO, the U.S., and Turkey, as well as the challenges of maintaining alliance cohesion in an increasingly multipolar world.

3. NATO threat perception and interests

NATO was established in 1949 by the U.S and its European allies, for the purpose of deterring the threats of the USSR. One of the key objectives of the treaty can be found in article 5 which clearly mentions that an attack on any member state is an attack on all. Moreover, since the beginning the organization and its European members relied heavily on the U.S military capabilities as a security guarantee (Østerud & Toje, 2013). Moreover, the collapse of the USSR which was the main enemy of NATO was the beginning of a new era for NATO, since the main purpose of the existence of it was no more exists, this resulted in a radical shift of the organizations *raison d'être*. Furthermore, despite the emergence of new threats after the USSR such as terrorism, cyberattacks, and regional instability, there was no clear consensus between the members of the organization on prioritizing these challenges (Duffield, 1994).

In the 1990s and 2000s, NATO moved eastward and aimed to add former Warsaw Pact members. This enlargement policy was meant to spread the democratic values and ensure regional stability, at the same time has added the out-of-area activities to the *raison d'être* of the organization which was only based on the collective defense before that (NATO, Enlargement and Article 10, 2024). However, it resulted in weakening the cohesion of the organization as a collective defense treaty. The U.S. always had a global focused strategy, while these intentions of the U.S, were usually clashed with the European members, since they usually put the regional stability into the center of their focus. This divergent of the two sides of the organization can be clearly seen in the NATO intervention in Afghanistan and Libya (Østerud & Toje, 2013).

The contemporary NATO threat perception is entirely different than before, currently, the NATO member states have divergent views on the modern threats, these divergence raises due to the regional priorities and strategic interests, for instance the European member states of NATO are prioritizing their regional collective defense while the U.S. focuses on their global interests and operations

(Michta & Hilde, 2014). Moreover, this divergent and the focus of the Europe on their regional interest made the U.S. to rethink about NATO again, in a couple of different occasions the U.S. officials have called the European NATO members as free-riders, since the vast majority of the organization budget is provided by the U.S., despite that the European members are not providing a similar amount of money, and they also avoiding the U.S. global interests and trying to focus on their own regional threats and interests (Østerud & Toje, 2013).

This divergence in priorities among NATO members has repeatedly highlighted the alliance's difficulty in maintaining cohesion when addressing multifaceted global challenges. In 2023, this internal complexity was further underscored as NATO, during the Madrid Summit, officially designated Russia as its primary adversary (NATO, Madrid Summit Declaration, 2022). This marked a return to NATO's Cold War-era strategic orientation, driven by Russia's aggression in Ukraine and its destabilizing influence on European security. By refocusing on collective defense against a clear and existential threat, the alliance sought to reassert its unity and purpose, while acknowledging the persistent challenges of aligning member states' interests in broader, multidirectional crises like Syria.

3.1 NATO's Position Toward the Syrian Crisis

NATO's response to the Syrian crisis after 2011 reflected strategic restraint and selective engagement. Unlike its interventions in Afghanistan and Libya, the alliance avoided direct military involvement in Syria due to the conflict's complexity, divergent member state priorities, and fears of escalation (Joyner, 2013). Instead, NATO focused on stabilizing the region through indirect measures, such as supporting the U.S.-led coalition against ISIS and implementing programs like "Train and Equip" aimed at bolstering moderate Syrian opposition forces. While this initiative demonstrated NATO's commitment to regional stability, it also highlighted its preference for minimizing direct engagement (Blanchard & Belasco, 2015).

Turkey, a NATO member directly impacted by the conflict, invoked Article 4 consultations multiple times, highlighting threats from cross-border attacks and refugee flows. Ankara also advocated measures like a no-fly zone and activating Article 5 following threats to its territory. Despite these calls, NATO maintained a cautious stance, focusing on regional stability while avoiding deeper military engagement (Moran, 2016). The limitations of NATO's response also reflected the broader decline of U.S. leadership within the alliance. The Obama administration's reluctance to commit militarily after the "red line" episode weakened perceptions of U.S. resolve (Chollet, 2016). This retreat reinforced NATO's crisis of cohesion: without active American leadership, the alliance was unable to bridge the gap between Turkey's urgent regional demands and the U.S./European preference for limited engagement. Thus, NATO's inaction in Syria became both a symptom and a cause of its institutional fragility, exposing the difficulty of reconciling global and regional priorities within the same alliance framework.

The divergence in threat perceptions among member states further complicated NATO's position. While the U.S. prioritized counterterrorism and global security, Turkey emphasized regional security concerns, particularly its opposition to Kurdish forces (Vugteveen & Farrell-Molloy, 2022).

3.2 The U.S. Position in Syria

The U.S. approached the Syrian conflict primarily through a counterterrorism lens, focusing on dismantling ISIS as a global threat. Washington led an international coalition against ISIS, partnering with local forces, including Kurdish groups such as the YPG (Blanchard & Belasco, 2015). While this strategy proved effective in combating ISIS, it caused significant friction with Turkey, which viewed the YPG as an existential threat to its national security. For Washington, ISIS represented the central global threat, which justified its partnership with Kurdish groups despite Turkey's objections (Vugteveen & Farrell-Molloy, 2022).

Early in the conflict, the U.S. supported the Syrian opposition and called for Assad's removal. However, its involvement was limited to indirect support, and Washington refrained from decisive actions, even after Assad's use of chemical weapons. The failure to act on the Obama administration's "red line" weakened U.S. credibility and created uncertainty about its commitment to resolving the conflict (Chollet, 2016). The U.S. approach to external actors in Syria was marked by its opposition to Russian and Iranian influence (U.S Department of State, 2023). Washington's policy aimed at countering these powers while simultaneously navigating complex dynamics within NATO.

Moreover, The U.S. prioritized stability and global security over regional dynamics, focusing on mitigating broader consequences such as the refugee crisis and ISIS's global reach (Karlin, 2018). This approach, while strategically focused, further strained relations with Turkey and underscored NATO's internal divisions. Additionally, Turkey's accusations that the U.S. supported the 2016 coup attempt exacerbated tensions, deepening mistrust between the two allies (Reuters, 2021). Beyond counterterrorism, the U.S. position reflected a gradual retrenchment from deep involvement in Middle Eastern conflicts. The failure to enforce the "red line" on Assad's chemical weapons, the prioritization of ISIS over regime change, and the reluctance to respond decisively to Turkey's security concerns all signaled Washington's reduced willingness to act as the regional anchor within NATO (Chollet, 2016; Karlin, 2018). This diminishing U.S. role deepened the alliance's crisis: without American leadership, NATO lacked the unity and initiative to respond effectively to Syria. From Ankara's perspective, U.S. choices in Syria were not only a betrayal of bilateral trust but also evidence that NATO could no longer guarantee Turkey's security.

3.3 Turkey's Position in Syria

Turkey's position in the Syrian crisis was shaped by its proximity to the conflict and its unique security challenges. Initially, Turkey's policy aimed at toppling Assad, aligning with broader international calls for regime change.

However, after 2017, Ankara deprioritized this objective, focusing instead on securing its borders and addressing threats from the Kurdish groups particularly the SDF.

Turkey repeatedly called for NATO's stronger involvement, invoking Article 4 consultations to address cross-border threats and refugee flows (Demirtaş, 2012). Ankara also advocated for a no-fly zone and even requested Article 5 activation in response to direct attacks on its territory (Moran, 2016). However, NATO's limited engagement prompted Turkey to pursue unilateral military actions and alternative alliances. Turkey's relations with the U.S. became increasingly strained as Washington partnered with Kurdish forces to fight ISIS. Turkey explicitly prioritized fighting Kurdish forces over ISIS, diverging from the coalition's primary goal. This led to its distancing from the U.S.-led international coalition against ISIS, as Ankara viewed Kurdish empowerment as a greater existential threat (Vugteveen & Farrell-Molloy, 2022).

The 2016 coup attempt in Turkey significantly strained relations with the U.S., as Ankara accused Washington of harboring Fethullah Gülen, whom it blamed for orchestrating the coup (Reuters, 2021). This mistrust exacerbated existing tensions over Syria, weakening bilateral ties within NATO. Turkey's dissatisfaction with NATO's limited engagement and U.S. policies pushed it toward alternative alliances, including cooperation with Russia and Iran in the Astana talks. This strategic pivot demonstrated Ankara's willingness to engage with external powers when its security needs were unmet (Lindgaard & Pieper, 2020). Turkey's trajectory during the Syrian conflict illustrates how NATO's institutional crisis directly shaped member-state behavior. Ankara's repeated but unanswered calls for collective action under Article 4 and Article 5 convinced Turkish leaders that NATO was either unwilling or unable to meet its security needs. Simultaneously, U.S. retrenchment and prioritization of counterterrorism over alliance solidarity deepened this perception of abandonment. From a neorealist perspective, Turkey's pivot toward Russia and Iran was therefore less a voluntary strategic choice than a compelled adjustment in an anarchic system where alliances failed to deliver. By

rebalancing outside of NATO, Turkey sought to maximize its security in a context where the alliance appeared fragmented and unreliable.

Turkey's stance also reflected broader regional dynamics. While NATO and the U.S. viewed the Syrian crisis through strategic and global lenses, Turkey's focus remained firmly on its territorial integrity and security concerns.

4. Conclusion

The conflict between Turkey and the United States in Syria after 2012 clearly shows how hard it can be to align national interests within an alliance like NATO. Turkey's focus on protecting its borders and dealing with the Kurdish issue clashed directly with the U.S.'s priorities of fighting ISIS and focusing on global stability (Blanchard & Belasco , 2015). These differences didn't just put strain on their bilateral relationship; they also revealed cracks in NATO's ability to handle complex crises like the Syrian war.

Using neorealism as a lens to view this situation helps explain why states—even allies—often act in ways that prioritize their own security over collective goals. Turkey's decision to act alone and even collaborate with Russia and Iran shows its frustration with NATO's lack of strong involvement (Bonsey, 2017). At the same time, the U.S. made its priorities clear by working with Kurdish groups, despite Turkey's strong objections. Both actions demonstrate how alliances struggle when members put their own needs first.

In conclusion, the conflict between Turkey and the United States in Syria after 2012 demonstrates how divergent national threat perceptions, when amplified by an institutional crisis within NATO, can destabilize even long-standing alliances. While the U.S. emphasized counterterrorism and global stability, Turkey prioritized territorial integrity and the Kurdish question. These differences alone might not have led to open conflict, but NATO's fragmentation and the perception of U.S. retrenchment magnified the divide, leaving Turkey to seek security beyond the alliance framework.

This study therefore finds that NATO's institutional crisis acted as an amplifier of bilateral disagreements rather than their root cause. By situating the U.S.–Turkey conflict within the broader weakening of NATO cohesion, the paper highlights the difficulty of sustaining collective defense when member states face asymmetrical security concerns. Future alliance management will depend on whether NATO can develop mechanisms to reconcile global and regional priorities before such divergences erode cohesion further.

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The Role of Internal Auditing in Detecting Accounting Errors and Fraud in the Erbil Public Sector

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Abstract

The role of internal auditing on the detection of accounting errors and fraud in the public sector" is the problem this research address. Internal audits support adherence to regulations and promote openness and propriety in the management of public funds. The Research adopted a quantitative approach using a set of structured questionnaires and targeted 109 public sector professionals in Erbil in Domain and Finance Accounting. The internal audit assessment focused on the results with internal audit processes, problems of auditors and auditing roles. The goal was to provide a detailed evaluation of the impact of internal audit performance on the detection of accounting errors and fraud. The data was analyzed using the Statistical Package for Social Sciences (SPSS), where some of the processes conducted include descriptive analysis, Kruskal-Wallis test and Spearman's rank correlation. Internal audit can reduce financial problems the most. Internal auditors are best efficient to detect unethical activities as they are exposed to full financial records. Research found restricted access to other factors, such as vendors, lack of training, inadequate techniques, and restricted access to manual data and files, which created the environment, which is most likely to produce accounting errors. The ability to detect fraud and accounting errors has also been tremendously enhanced by continuous auditing. However, positive results were accompanied by significant barriers to the audit, which including an audit resource restriction and fear of losing jobs. The research makes a compelling case regarding the need to improve audit techniques, incorporate digital audit tools, and pursue continuous professional development. All these improve the financial management, accountability, and openness of the public sector.

Keywords: *internal auditing, accounting errors and fraud, errors and fraud detection, internal control, risk management.*

1. Introduction

1.1. Background

By taking relevant information and elaborations into account, an auditor can determine whether the balance sheet has been organized correctly, whether it provides a true and fair view of the business's financial position, and whether the profit and loss account accurately represents the financial period's outcomes.

Otherwise, the auditor can identify which aspect of the financial reporting or literature is lacking. Internal auditing is an objective evaluation activity within an organization designed to review operations as a management service (Pegler & Spicer, n.d.). Its primary role is to assist management in ensuring compliance through objective analysis, assessments, recommendations, and comments on the activities under review. Internal audits also assure the design and operational effectiveness of internal control systems, including internal check mechanisms.

External audits enhance financial reporting through transparency, accountability, and accuracy. Independent auditors, nominated by shareholders, are responsible for evaluating financial statements objectively (Ugoani & Ibeenwo, 2022). One common type of external audit is the certification audit, which certification bodies or third-party organizations conduct. Accounting fraud and inaccuracies pose severe risks to the integrity of financial data. According to Arens, Elder, and Beasley (2012), errors are unintentional misrepresentations resulting from human errors, such as clerical errors, miscalculations, or the misapplication of accounting principles. In contrast, fraud is defined as intentional deception for unlawful or unfair gain (Wells, 2017).

Public sector accounting plays a vital role in combating fraud, especially in the digital era. Scholars such as Siti Kustinah (2019) and Kristiyani & Hamidah (2020) argue that fraud often stems from human error, technological ignorance, and a lack of understanding of digital tools in accounting.

Public charities report accounting errors 60% more frequently than publicly traded companies, with omissions being especially common in the public sector, generally due to internal control flaws (Burks, 2015).

The updated national accounting standards can help reduce financial statements errors (utrusinova et al., 2022). However, the digital world introduces additional challenges, such as technical misunderstandings, technology-competent fraud and human errors (Christian and Hamidah, 2020).

Public sector organizations need to emphasize accountability of performance, establish strong fraud prevention policies and implement preventive and technical measures to reduce these risks (Christian and Hamidah, 2020). An important part of these efforts is internal audit. Research indicates that effective internal audit departments can significantly reduce fraud in public entities (Emmanuel et al., 2013; Unegbu & Kida, 2011). By ensuring complete and accurate reporting of transactions, internal auditors increase the accuracy and reliability of financial statements (Muntanu et al., 2016). The internal audit departments serve as a valuable tool for fraud management and organizational errors (Monisola, 2013). According to Gayen et al. (2024), independent, team capacity, leadership support, and audit quality all positively affect the effectiveness of fraud detection through internal auditing. Additionally, the results of fraud detection are greatly affected by auditor responsibilities and training (Dogglas et al., 2017; Gayen et al., 2024). The roles of internal audit in relation to fraud are also shaped by corporate governance and ethical framework (Bonartha and Yulruch, 2021).

Organizations should strengthen auditor expertise, expand the size and autonomy of the audit teams, support internal audit operations, and support safe management support to prevent internal audit effects and prevent internal audit effectiveness in detection of fraud. Another important idea is the Chief audit executive gender (Lestari and Bernvati, 2020).

Performance accountability, preventive methods, technological innovation, and special fraud prevention mechanisms should all be integrated into public sector fraud prevention (Christiani and Hamidah, 2020). Ultimately, internal auditing plays an important role in detecting and reducing accounting errors and fraud in the public sector.

1.2. Research Objectives

To detect and diagnose financial errors, assess the efficiency of internal control, and prevent fraud are the main objectives of the internal auditing system. Additional targets can evaluate the integrity and purity of financial accounts, ensuring that rules

and laws are followed, and provide recommendations for process growth. To meet these objectives, internal auditing systems can support accountability and validity, reduce risk and improve economic stability. The purpose of this research is to determine the objectives of the internal audit system and assess its effectiveness in identifying accounting errors and fraud.

Principal Goals

1. Error detection is the process of completely reviewing financial documents to identify issues with errors, discrepancies, or accounting systems. It is necessary to determine whether it does not understand or can cause problems below the line.
2. The purpose of the prevention of fraud is to find out active unethical activity, such as embezzlement, corruption and theft. The goal is to create a system that makes individuals more difficult to eliminate fraud and avoid detection.
3. Evaluation of internal controls: The goal of this phase is to set how the company's internal control successfully supports its operation. This involves assessing the performance of current systems in preventing issues and, if necessary, identify what to change.

Secondary Goals

1. Risk assessment: Identify and assess potential financial and operational risks.
2. Compliance Monitoring: Confirm that laws, regulations and corporate policies are being followed.
3. Operational efficiency: Evaluate how well the financial and operational processes work.
4. correctness of Financial Reporting: Verify the correctness and dependence of the financial data and report.

1.3. Research Problems

1. Inadequate internal control: Many companies have weak internal control, which makes it difficult to find financial or accounting errors and fraud for internal auditors.
2. Limited resources: Inadequate financing, lack of employees, and older technology often encounter internal audit departments of some issues. These issues can lead to errors and disrupt their ability to detect fraud.
3. Lack of freedom: Internal auditors may seem challenging to maintain freedom and fairness when management is pressurized to disclose or compromise their findings.
4. Insufficient Training and Experience: Internal auditors might lack the necessary knowledge, skills, and expertise to identify complex financial and accounting fraud and errors effectively.

1.4. Research Questions

1. To what extent does an internal auditing system help identify fraud, accounting errors, and other issues within a company?
2. What are the essential elements of a successful internal auditing system that identify fraud and financial/accounting errors?
3. How does an internal auditing system influence an organization's reliability and the quality of financial reporting?

1.5. Research Hypotheses

H1: Identifying accounting errors and fraud is positively correlated with the efficiency of the internal auditing system.

H2: Institutions with robust internal auditing systems are more likely to identify fraud and financial/accounting problems than those with less robust systems.

H3: Identifying accounting fraud and errors is strongly correlated with the independence of internal auditors.

1.6. Significance of the Study

The result underlines the importance of accounting impurities and fraud and the importance of internal audit to prevent illegal acts of corporations. This indicates how the audit of audit errors and fraud and do so, the trust of the registrar, managers and investors. This internal reporting underlines internal auditing processes, which aims to increase the accuracy of financial records, internal control systems, and fundamental legal compliance. It moves forward; This system can also increase the operational effectiveness of the organization and reduce operating errors and losses. In short, the results include what other physicians have solicited for, as well as the internal system auditing processes designed under control so that they can notice defects before the magnifying.

This research is important in adding knowledge to new concepts of internal auditing and fraud detection, and therefore, I will encourage academics and above research to focus on this document. This research underlines the need to audit an organization to promote internal integrity, responsibility and efficiency.

2. Methodology

2.1. Research Design

This study uses quantitative research to evaluate how internal auditing systems can discover fraud, accounting errors and other difficulties in public sector, adding existing literature on corruption. Research collects quantitative data through surveys, making it suitable for statistical analysis and interpretation. This technique allows for investigation of links between internal auditing processes and discovery of both public sector fraud and accounting concerns.

2.2. Data Collection

The structured questionnaire was used to collect primary data on the efficacy of internal auditing in detection and escape fraud and accounting issues. Employees

of 109 public sector firms participated in the target zone of the survey, Erbil-Soran. A stratification random selection approach was used to guarantee proportional participation from important groups such as auditor, accountant, accounting managers and finance experts. This approach increased the representation of the sample and the validity of the conclusions. The survey's Closed-ended questions of the survey included a wide range of internal auditing-related subjects, including policies and procedures, training, auditor accountability and technology used to detect fraud. To ensure comparability, the information was collected from the website within a predetermined time frame.

2.3. Data Analysis

SPSS (Statistical Package for the Social Sciences) was used to analyze the data. Data properties, such as frequency, were reflected using descriptive statistics. The following statistical tests will be employed to analyze and assess the gathered data, aiming to determine how internal auditing methods relate to the identification of fraud and accounting errors. A data analysis tool called a decision tree model is chosen and presents the following results. It aids in understanding the link between variables, which is why it forms part of the analytical process.

3. Results and Discussion

The research findings indicate that men hold the majority of positions in public establishments in Erbil. Seventy men and thirty-nine women participated in the study; 64.2% of the respondents were male, and 35.8% were female. The sample consisted of 109 participants, with 69% females and 31% males.

As indicated in the gender breakdown of responses, men are more likely to hold accounting and internal auditing roles. However, it is essential to note that although 35.8% of women were involved, it is necessary to evaluate how females perceive internal auditing processes. Distribution of Respondents by Job Title: 38.5% of the survey participants are accounting professionals, followed by auditors (21.1%), accounting managers (16.5%), and financial/accounting staff (17.4%), as indicated

by the respondents. Most respondents are accountants, auditors, and professionals in the fields of accounting and finance.

Table 1: Biography Information

	Variable	Frequency	%
Gender	Male	70	64.2
	Female	39	35.8
	Total	109	100
Job Title	Auditor	23	21.1
	Accountant	42	38.5
	Accounting Manager	18	16.5
	Auditing Manager	7	6.4
	Finance/Accounting Staff	19	17.4
	Total	109	100

This study reviews the effectiveness of public sector audits in evaluating the performance of internal audits. The results show that 52.3% agree and 45.0% strongly agree that the internal audit system is paramount to the efficacy of the auditing process.

They do not believe the system will work, as evidenced by the fact that only 1.8% of respondents are skeptical and 0.9% disagree. This is despite finding that 97.3% of respondents were confident the internal audit system was effective. (see table 2) (Ikhsan et al., 2024).

Table 2: The impact of Internal Audit on the success of the auditing process

	Variable	Frequency	%
The internal audit system in the public sector has a	Strongly Disagree	0	0
	Disagree	1	0.9
	Neutral	2	1.8

significant impact on the success of the audit process.	Agree	57	52.3
	Strongly Agree	49	45
	Total	109	100

The research reveals a clear consensus on the need for internal auditing to prevent errors or fraud in financial reports. The majority of respondents also stated that internal auditing has a significant impact on preventing these errors (44% agree and 44% strongly agree). 4.6% disagree; 7.3% are unsure or concerned about its effectiveness. The majority (88%) understand the importance of internal auditing in preventing fraud, accounting errors, and other financial errors, illustrating the criticality of this function in firm governance. The extremely low disagreement rates indicate that, by far, most people view internal auditing as having a positive impact on financial management and fraud prevention (see Table 3) (Ehiagwina et al., 2024).

Table 3: The role of internal audit in reducing the financial risk

Internal Auditing Significantly Reduces the Financial Risk in an Organization.	Variable	Frequency	%
	Strongly Disagree	1	0.9
	Disagree	4	3.7
	Neutral	8	7.3
	Agree	48	44.0
	Strongly Agree	48	44.0
	Total	109	100

Most researchers believe the internal audit team possesses all the necessary tools to detect fraud. However, 34.9% of respondents indicate that the team lacks the required tools and support for effective fraud detection. Additionally, 20.2% are unaware of the team's resources, suggesting confusion or a lack of awareness. While 45.0% of respondents believe the future is bright, 34.9% feel the team does

not have the necessary resources. The fact that 20.2% of respondents did not know or chose not to answer indicates that some individuals are likely uninformed about the services provided (see Table 4) (Teye et al., 2023).

Table 4: The Necessary Resources for Internal Audit

Does the Internal Audit Team have the Necessary Resources (Staff, Training, Technology) To Detect accounting fraud and errors effectively?	Variable	Frequency	%
	Yes	49	45.0
	No	38	34.9
	Not Sure	22	20.2
	Total	109	100

However, according to Table 5, 79.8% of participants believe there is sufficient access to information for internal auditors to address problems. Only a tiny percentage (9.2% disagree and 0.9% strongly disagree) think it is unproblematic. While some believe occasional issues or limitations may arise in how auditors can conduct thorough inspections, most agree that information availability is rarely a problem. This information-sharing platform should also address transparency-related challenges and data access barriers, streamlining the information-sharing process and enhancing data availability. Additionally, having the right resources and training can improve auditors' problem-solving ability (Syahrul et al., 2023).

Table 5: The Necessary Information for Internal Audit

Do Internal Auditors Have Access to All the Necessary Information to Resolve Any Issues?	Variable	Frequency	%
	Strongly Disagree	1	0.9
	Disagree	10	9.2
	Neutral	11	10.1
	Agree	58	53.2
	Strongly Agree	29	26.6
	Total	109	100

Table 6 shows that 73.4% of participants believe that the complexity of financial data affects the fraud detection ability of the internal audit system. Most respondents (90%) recognize that more advanced auditing techniques are necessary for complex data sets. Even so, 12.8% doubt this, and 13.8% do not consider complexity an issue. Invest in state-of-the-art equipment and data analytics software to enhance fraud detection and provide internal auditors with the necessary resources and training (Shan et al., 2023).

Table 6: The efficiency of the internal audit system

Does the complexity of financial data affect the efficiency of the internal audit system in detecting fraud and error?	Variable	Frequency	%
	Yes	80	73.4
	No	15	13.8
	Not Sure	14	12.8
	Total	109	100

Refer to Table 7. 66.9% of respondents state that the internal audit team is independent and separate from the company it audits. However, a concerning 14.7% are indifferent, indicating a lack of interest or care. There is also concern regarding a potential conflict of interest or its effect on audit objectivity (18.3%). These efforts include promoting transparency, addressing potential conflicts of

interest, enhancing communication about the operational independence of internal auditors, and highlighting the value of the internal audit process (Setiawan et al., 2023).

Table 7: The efficiency of the internal audit system

The Internal Audit Team Is Entirely Independent of the Entity	Variable	Frequency	%
	Strongly Disagree	6	5.5
	Disagree	14	12.8
	Neutral	16	14.7
	Agree	54	49.5
	Strongly Agree	19	17.4
	Total	109	100

According to Table 8, one of the biggest challenges that internal auditors face is a lack of access to data and information. The overwhelming majority of respondents (84.4%) agree that this is a significant problem.

Only 5.5% of respondents indicated they were unsure about the impact inaccessibility would have on the industry.

Poor data management system, restricted financial data access, and deliberate data preventing data can be more difficult to detect fraud or other financial errors (Teye et al., 2023).

Table 8: Access to data and information

Lack of access to data and information is one of the challenges internal auditors face when trying to identify financial errors or fraud.	Variable	Frequency	%
	Strongly Disagree	0	0
	Disagree	11	10.1
	Neutral	6	5.5
	Agree	47	43.1
	Strongly Agree	45	41.3
	Total	109	100

4. DECISION TREE MODEL

The method of learning a flexible and user-friendly machine for classification and regression problems is the tree. Since non-parametric models do not determine data distribution, they can be applied in various situations. Root nodes, branches, internal nodes and leaf nodes include a decision tree hierarchical structure. The process divides the dataset by the characteristic, beginning at the root node. The final decision or the prognosis of the disease is reflected in leaf nodes, which are achieved after a recurrent journey through internal nodes.

The decisions model the intricate relationships in data to the trees efficiently division and conquest. The decision is a common prediction model in data science and machine learning for trees regression and classification (Fürnkranz, 2020; Rokach, 2016). To create a tree-like structure, they repeatedly divide the data into small sub-groups, standing with internal nodes and standing for tests and leaves for categories (Navda et al., 2011).

Decision trees are important because they are great in getting information from data and can be interpreted (fürnkranz, 2020). To inspire the decision trees, many types of methods have been developed, such as ID3, C4.5, CART and CHAID; These algorithms have different use and strengths (Batra and Aggarwal, 2018). Decisions add several trees to improve the performance of the forest prediction, perform better than individual trees in terms of accuracy (Rokach, 2016). Decision trees and forests are used in many domains, such as search engines adaptation, medical research, statistics and text extraction (Navada et al., 2011). Their capacity to visually represent the options, events, and results under consideration makes them useful tools for decision-making (Batra & Agrawal, 2018). Using the CHAID technique, we created decision trees to share the findings of internal audits.

While Node 2 (Strongly Agree, Disagree) demonstrated a lower possibility of successfully conveying audit results, Node 1 (Agree, Neutral) suggested a higher likelihood of usual outcomes. After that, the models were divided into two groups. These results lend credence to the idea that how employees see the accessibility of

information greatly influences how transparent internal audits are. If employees believe that information availability is a barrier, they may also run into issues that might impede the internal distribution of audit results. This figure's categorization decision tree divides data using the ongoing training function. The top node, or root node, is defined by "Ongoing Training ≤ 0.5 " and has a maximum entropy of 1.0. The data points consist of a "More Effective" sample and a "Less Effective" sample. "Less Effective" is the default class. The left child node represents the data when 'Ongoing Training ≤ 0.5 ', while the right child node defines the data where 'Ongoing Training > 0.5 ', given a 0.0 entropy. The class is titled "More Effective." The decision tree is straightforward and was most likely trained using a small dataset of only two samples. Each approach is classified as "More Effective," and "Ongoing Training Is 0.5 or Less" is classified as "Less Effective." According to both models, audit transparency and result distribution will be increased by expanding access to the data needed for the audit. Strong internal control, better staff training and technology integration, more information availability, and improved internal capabilities are among the key findings and recommendations. To improve overall internal audit performance, businesses need to ensure that relevant audit data is available, use modern technology, and optimize resources allocation and internal control.

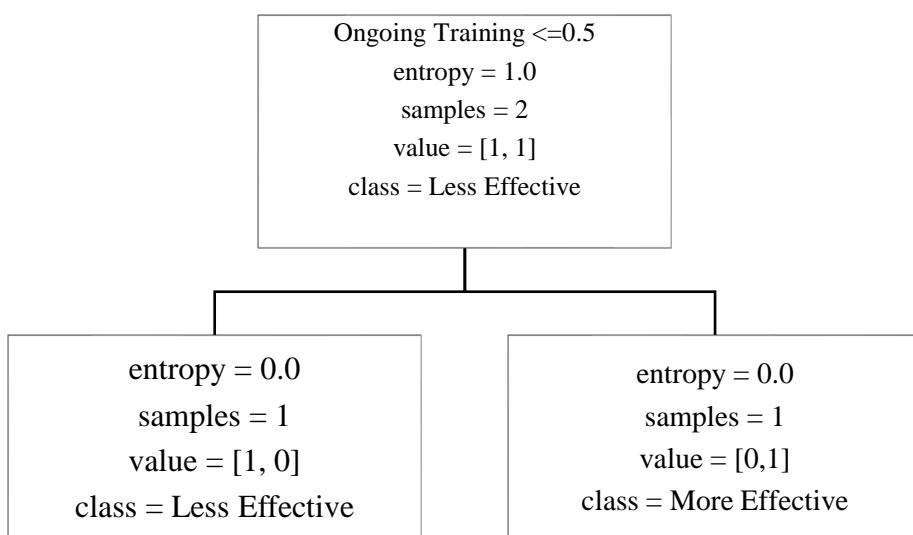


Figure 1. Chaid Decision Tree for Internal Auditing Outcomes Sharing

To determine factors affecting internal audit transparency, the CHAID decision tree model was used. The Chi-Square Automatic Interaction Detection (CHAID) was used to create a model with a maximum depth of three.

According to the survey, one of the most important factors affects how well internal auditing works how employees experience their access to information. The functioning divides the answer into two categories: those who agree with the proposal, those who disagree, and who strongly believe that information availability is an issue. The model correctly forecasted the occurrence of information shortages and their effects on audit results.

The results suggest that audit outcomes do not disseminate due to access to information. Both models suggest that increasing access to relevant audit information would likely enhance audit transparency and lead to a more effective sharing of information.

The second model also examines the factors contributing to such difficulties. Organizations should focus on improving staff training, providing technology to enhance the accessibility of critical audit data to auditors and AM/CC, and strengthening internal controls to improve the overall efficiency of internal Audits. This Chaid decision tree graphically represents the impact of the variable "Lack of Access to Information" on the result categorization (Either "Yes" or "No"). The tree displays five samples, with "Yes" being the majority and "No" being the minority. The condition met is "Lack of Access ≤ 1.5 " with a 0.0 entropy, indicating a perfectly pure node.

The left child (True branch) has a single "No" instance, while the right child (false branch) has a "Lack of Information Access > 1.5 " condition. The main takeaway is that classification is significantly impacted by the variable "Lack of Access to Information." "No" results from lower values (≤ 1.5), indicating that access isn't a barrier. "Yes" is associated with moderate values (1.5 to 3.5), suggesting that access problems significantly impact the results. High values (Around 4.5- 5) lead to categorization ambiguity.

In practice, more positive replies ("Yes") correlate with greater difficulty in obtaining information, indicating that internal audits are more effective when

restricted access is not absent. However, extremely good or poor access might have conflicted or unfavorable effects.

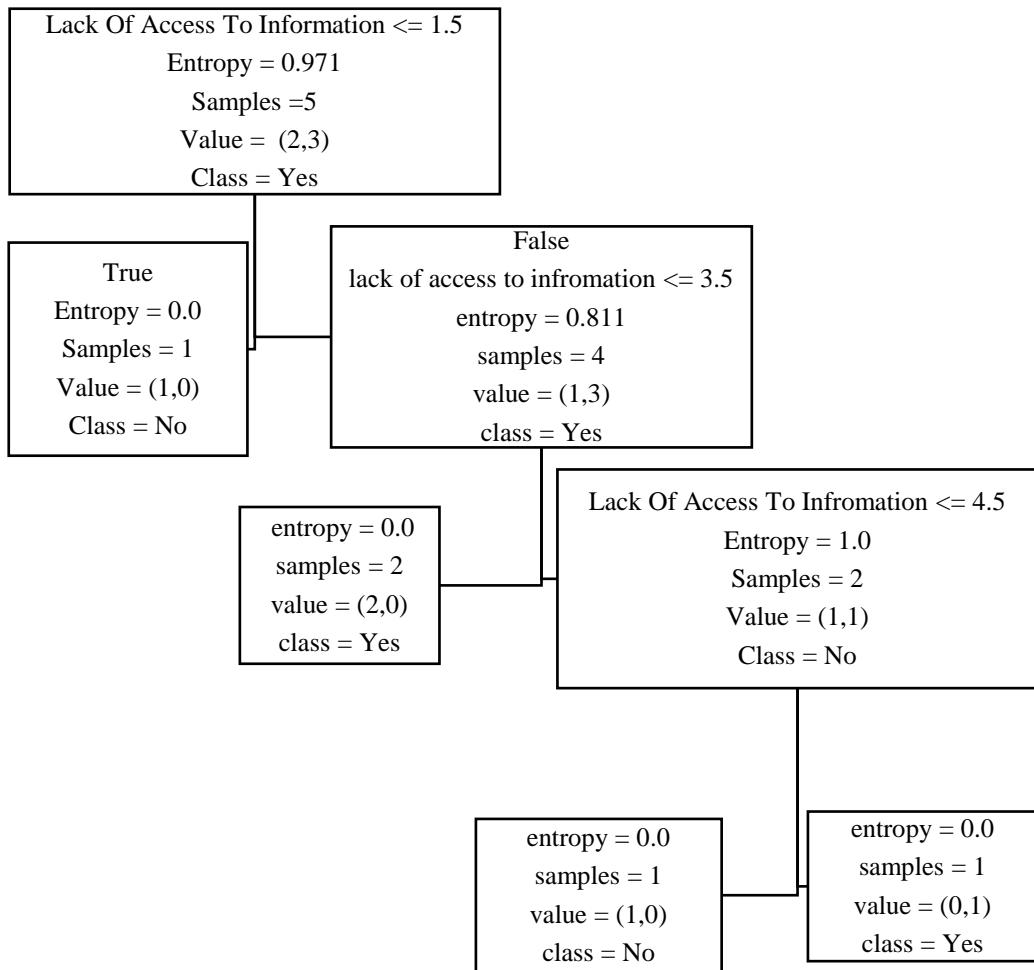


Figure 2. Chaid Decision Tree for Lack of Access to Information

Kruskal-Wallis Test

A Non-Parametric Statistical Technique Called the Kruskal-Wallis Test Is Used to Assess Whether Three or More Independent Groups Vary Statistically Significantly on a Continuous Variable That Does Not Have a Normal Distribution. This Test Is Very Helpful When Ordinal Data or Ranks Are Involved, or When the Assumptions of ANOVA Are Not Followed (Mcknight & Najab, 2010; Schmidt, 2010). The Test Is Robust Against Violations of Normality and Homogeneity of Variance, as It

Assesses the Rankings of the Data Rather Than the Data Values Themselves (Hin, 2012; Elamir, 2015).

The Salient Characteristics of the Kruskal-Wallis Test Include Its Non-Parametric Nature: It Is Appropriate for Data That Is Not Regularly Distributed Since It Does Not Presume a Normal Distribution (McKnight & Najab, 2010). This Test Extends the Two-Sample Mann-Whitney U Test to Many Groups (McKnight & Najab, 2010). Although It Doesn't Indicate Which Sample Is Stochastically Dominant, the Rejection of the Null Hypothesis Shows That At Least One Sample Does So (Elamir, 2015).

See Table 9. Variables in Internal Audits and the Kruskal-Wallis Test. Internal Auditors Have Sufficient Data to Carry Out Their Business. The Outcomes Are:

1. Lack of Access to Necessary Information Significantly Affects Internal Auditing Performance in Many Areas. For Every Variable, the P-Value Is Below 0.05: The Most Important Result Is That "Manual Processes Lead to Errors" ($H=24.511$, $P=0.000$), Meaning That Lack of Access to Required Information Has a Substantial Link with Errors in Hand Accounting Procedures. Greater mistake rates were highly correlated with manual procedures ($H = 24.511$, $P = 0.000$), indicating that a lack of automation or dependence on human recording is linked to higher error rates.
2. Internal Auditing Efficacy: "Internal Auditing Systems Are Significantly Effective" ($H=9.310$, $P=0.025$); Therefore, Limiting Access to Information Adversely Affects the Efficacy of Internal Auditing Systems. Auditors May Be Unable to Perform Their Roles Effectively Without the Necessary Operational or Financial Data.
3. Error identification and fraud prevention: "Continuous Internal Auditing Is a Significant Deterrent to Fraud" ($H=14.768$, $P=0.002$) demonstrates that audit teams who lack extensive data access struggle more to identify and halt fraudulent activity. Similarly, "Internal Auditing Can Help Identify Accounting Issues" argues that limiting information access does not make it possible to identify accounting errors. Continuous internal auditing has been positively correlated with lower fraud

risk ($H = 14.768$, $P = 0.002$), suggesting that organizations that practice this practice are likely to report fewer fraud challenges. The capacity to spot fraudulent activity was substantially correlated with a more robust internal audit system ($H = 14.848$, $P = 0.002$), suggesting a link between audit efficacy and fraud detection.

4. Problems with Reporting and Communication: The Outcome of Probation Measures Internal Auditing Has Reflected on All Parties Involved ($H=13.111$, $P=0.004$), Insinuating That Problems With Information Access Affect the Effectiveness of Communicating Audit Findings. Such breakdowns in communication might result in a delay in the initiation of corrective action or a failure to promptly identify a financial risk. Access to information required for the effective completion of internal audit procedures is severely hampered with regard to error detection, fraud prevention, and communication of audit results; the strongest correlation is seen between manual processing errors and a lack of information access. Organizations must ensure that this vital financial data is accessible since it will improve the effectiveness of their internal controls and help them prevent errors.

Table 9: Kruskal-Wallis's Test

Test Statistics A,B						
	Internal Auditing Can Identify Accounting	Internal Auditing Systems Are Significantly Effective.	Manual Processes in Recording Transactions of Ten Cause Errors.	Continuous Internal Auditing Significantly Prevents Fraud.	Internal Auditing Outcomes Are Shared with Relevant Parties.	
Kruskal-Wallis H	14.848	9.310	24.511	14.768	13.111	
Df	3	3	3	3	3	

Asymp. Sig.	.002	.025	.000	.002	.004
A. Kruskal-Wallis Test					
B. Grouping Variable: Lack of Access to Necessary Information Challenges Internal Auditing					

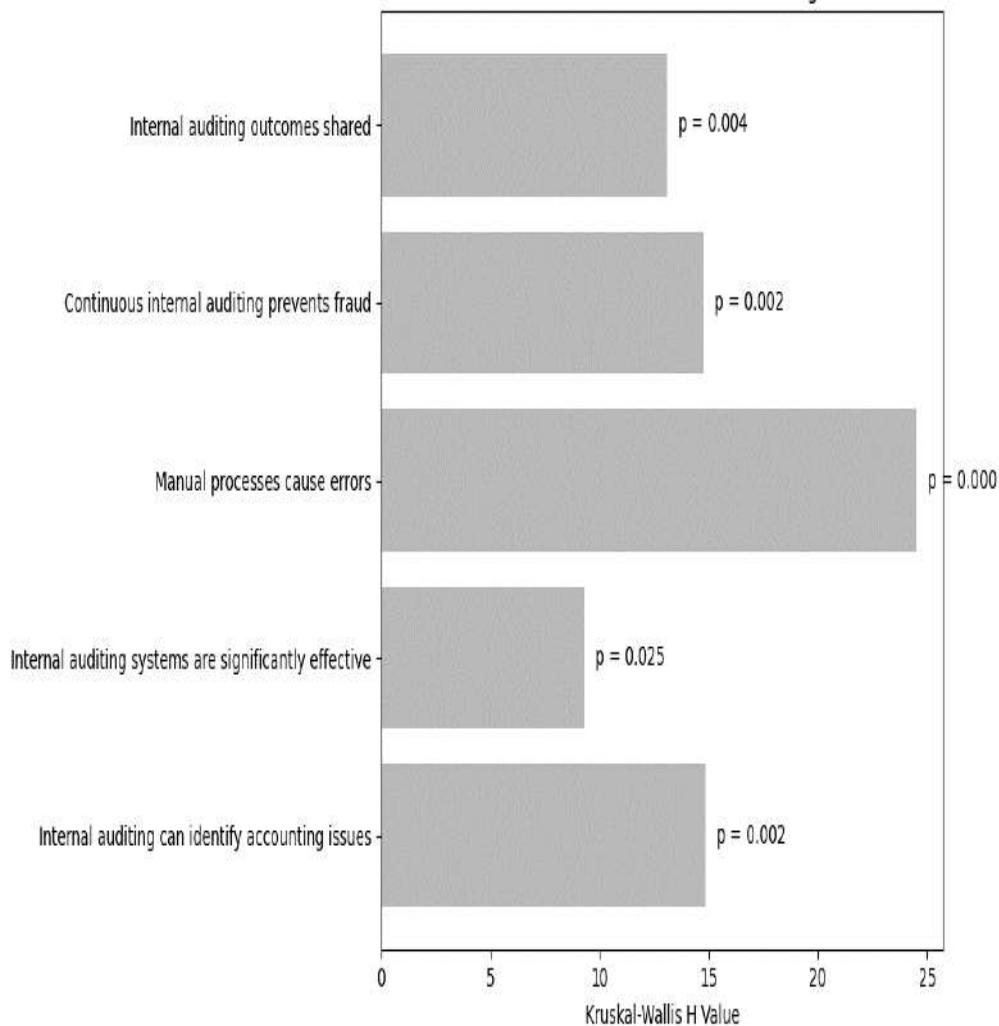


Figure 3. Wallis's Test Results for Internal Auditing Variables

The non-parametric statistical measure known as Spearman's Correlation, denoted by ρ (Rho), assesses the strength and direction of the relationship between two

variables, especially when the data is ordinal or does not meet normality assumptions.

Key attributes: Non-parametric nature: Since Spearman's Correlation does not assume a linear relationship or require interval data, it can be used to analyze ordinal data (Culyer, 2014).

Unlike Pearson's Correlation, which assesses linear correlations, Spearman's Correlation is more suitable for a broader range of applications, particularly in biological research and economic studies.

(Mendivelso, 2022) (Culyer, 2014) (Prayoga & Suliadi, 2024). Calculation Based on Rank - It mitigates the effect of outliers by using the rankings of data points rather than their raw values (Liu, 2017). How to Interpret Coefficients - A significant positive link is indicated by a correlation coefficient value near 1, a strong negative association is indicated by a correlation coefficient value near -1, and no association is suggested by a correlation coefficient value near 0 (Mendivelso, 2022). The study demonstrates a direct relationship between internal auditing and fraud prevention, with a significant correlation ($R = 0.409, P = 0.01$). An effective internal audit system enables the recognition of fraudulent behavior and prevents it from occurring. The relationship, $R = 0.349, P = 0.01$, highlights the crucial role of continuous internal auditing in mitigating fraud and errors. Additionally, the study highlights the use of technology in enhancing fraud detection, revealing a positive correlation ($R = 0.462, P = 0.01$) between electronic systems and improved fraud detection. Conversely, a significant correlation exists between systems with handwritten transactions, where the risk of fraud is heightened due to outdated manual methods ($R = 0.461, P = 0.01$). Auditor independence and information availability are further emphasized in the report. A high positive correlation ($R = 0.428, P = 0.01$) exists between auditor independence and auditors possessing access to relevant information. Conversely, a lack of access has a direct impact on attempts at fraud prevention, as indicated by the correlation ($R = 0.343, P = 0.01$). The result of continuous auditor training and enhanced fraud detection shows a weak correlation ($R = 0.269, P = 0.05$), suggesting that regular

training and skill development for auditors improve their ability to detect fraudulent activity.

Another dimension related to the availability of sufficient organizational resources is auditor independence ($R = 0.226$, $P = 0.05$), which further underscores the importance of transparency and free access to data.

The study highlights the importance of an internal audit system, technological enablers, and auditor independence in reducing the risk of financial fraud and errors. Relying on manual transaction methods increases the likelihood of financial errors, while audits and proper access to information are essential tools in preventing fraud. There is a positive correlation between frequent internal audits and a lower risk of fraud ($R = 0.349$, $P = 0.01$), indicating that organizations conducting regular audits tend to experience fewer fraud issues. Errors in manual accounting procedures are significantly linked to information availability ($H = 24.511$, $P = 0.000$), suggesting that perceived information barriers are associated with a higher probability of error.

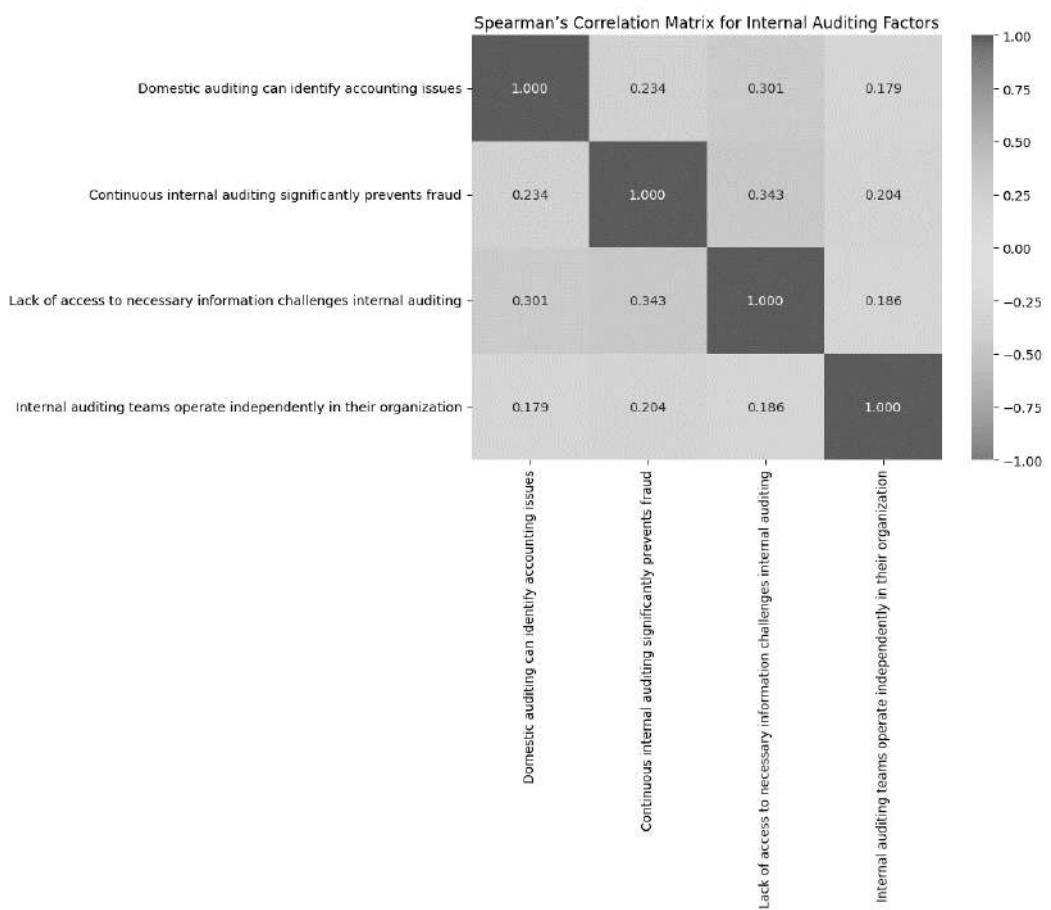


Figure 4. Spearman's Correlation Matrix for the Internal Auditing Factor

4. Conclusion

These research results highlight the importance of internal auditing in detecting fraud and accounting errors, especially in chartered accounting within the public sector in Erbil. Regulatory compliance: Internal audits help ensure the organization follows regulations and guidelines, thereby reducing the risk of audits and penalties in other jurisdictions. Ignoring issues like auditor independence, resource limitations, and weak internal controls can limit the effectiveness of internal auditing systems. However, studies show that strong internal audit teams improve internal control, enhance financial reporting quality, and reduce major financial

errors. The findings reveal that internal auditing offers financial protection and promotes accountability, transparency, and effective risk management in public sector organizations. However, if important issues regarding auditor independence and information exchange are resolved, internal audits may be very beneficial to government organizations. The study also highlights how technological advancements imply that continuous auditing and digital audit frameworks might significantly improve fraud detection and fiscal management. All things considered, this study makes clear how internal audits contribute to good financial governance. By highlighting the necessity of independent auditors, improved training initiatives, and state-of-the-art auditing techniques, it provides lawmakers, regulators, and executives with insightful information. Regulatory bodies should take strong steps to ensure audit effectiveness in light of these results, such as providing an audit firm with adequate freedom and resources. Despite its significant contribution, there are limitations of this study. Additionally, the practical, individual approaches to the auditors have to face problems that come before them by completely relying on formal inquiries. To provide more complete picture, future research may examine internal auditing thought a range of businesses, examine the long-term effects of audit changes, and include qualitative techniques such as interviews. According to this study, internal auditing is necessary to prevent financial integrity, accountability and fraud. According to this study, therefore, in order to improve stakeholder confidence, openness, and efficiency in the financial administration of the public sector, audit processes had to be reinforced. As long as financing is obtained, the auditor independence is increased, and technology advancements are embraced, internal auditing will continue to grow as a successful tool for safeguarding our financial systems.

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The Adoption of E-Learning: Master Students' Perceptions in Jordan

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Abstract

This article illustrates the impact of e-learning on education. The viewpoints and experiences of students concerning e-learning will be integrated. This study utilized interpretive phenomenological analysis to investigate participants' lived experiences. This study involved 23 master's students from Northern Jordan. Students' perceptions of the impact of ICT on education were collected through semi-structured interviews. The findings are classified into two themes: "facilitators of e-learning adoption" and "barriers to adoption." The e-learning market in Jordan is modest yet possesses potential. This study may aid schools in Jordan and other developing countries in understanding student opinions on e-learning. Educational institutions should improve strategies for the retention and recruitment of domestic and international students. E-learning expedites access to diverse ideas, experiences, and cultures, hence augmenting tangibility and social relationships. This research on student cognition will aid higher education policymakers in developing countries like Jordan. This study enhances the existing body of research on e-learning acceptability by examining both facilitating and hindering factors. The research specifically utilized Interpretative Phenomenological Analysis to ascertain factors.

Keywords: *e-learning, adoption, information and communication technology, Jordan*

1. Introduction

Online education is flourishing in Jordan due to the transformative impact it has on students' lives. It provides students the autonomy to learn at their convenience and enhances their skills simultaneously. For inquisitive pupils seeking to learn at their own tempo. There exists significant untapped potential for technological integration within the education sector, and students exhibit a pronounced preference for

innovative products and services. Students are embracing "self-directed learning" through e-learning models that facilitate significant bidirectional connection between educators and learners. Currently, educators are not satisfied with solely delivering classroom lectures; they are also establishing virtual classrooms through the use of diverse digital media. This has broadened the extent of engagement. Digital platforms have facilitated an optimal e-learning experience and fostered autonomy in learning styles, thereby addressing challenges such as the necessity for instructors with specialized knowledge and the reliance on antiquated approaches. Nonetheless, the inquiry emerges regarding the capability of an online classroom to fulfill these objectives.

Recent e-learning systems prioritize educators over students, as noted by Ssekakubo et al. (2011). Prior research has sought to identify the deficiencies of online education and propose remedies. Individuals participating in professional courses have been the principal focus of research (Pantazis, 2002; Sambrook, 2003; Li et al., 2016; Sofi-Karim, Bali, & Rached, 2023). This paper's study centers on the subsequent inquiry: In what ways are students in Jordan using online education, and what challenges do they encounter?

2- Literature Review

The global prevalence and influence of information and communication technology (ICT) are increasing. Consequently, the majority of countries perceive ICT as enhancing the quality of education (Noor-UL-Amin, 2013; Albugami and Ahmed, 2015; Sofi-Karim, Bali, & Rached, 2023). Teachers are progressively utilizing ICT as an adjunct to their lessons. Technology has facilitated educational materials, both directly and indirectly. It facilitates the distribution of information regarding scarce educational resources to a broad audience. Educators are no longer required to depend exclusively on blackboards in conventional lecture halls. The current situation is less apparent. Educators are integrating technology into the classroom to engage pupils and offer practical examples. Conversely, students utilize it to delve deeper into subjects that captivate their interest.

Jordan, with more than 6 million individuals aged 5 to 24, has a significant opportunity for the education sector (Sandri, Hussein, & Alshyab, 2020). The Ministry of Higher Education and Scientific Research (2021) estimates the current worth of the online education sector in Jordan at \$27 million, with projections indicating a fivefold increase over the next five years. In 2022, Jordan allocated 3.2% of its GDP on education, as reported by the World Bank's collection of development indicators.

The Jordanian government has initiated a reform of its higher and vocational education institutions by integrating information and communication technologies (Abuhmaid, 2008; Ali & Hashlamun, 2019). A World Bank document estimates the government program at US\$7.3 billion, comprising US\$6.0 billion in projects for MOE budget allocations from 2018 to 2022. The surge in online education in Jordan is driven by rising disposable income, decreasing tuition fees, extensive Internet accessibility, an increasing number of smartphone users, and an elevated employability index. Educational trends are rapidly shifting, characterized by a rise in senior students, part-time students, and individuals from diverse origins (Shirazi, 2020). Information and Communication Technology in education not only enhances student learning but also promotes creativity, engagement, and information exchange. The Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) initiatives, both funded by the government of Jordan, seek to tackle this issue. The integration of information and communication technology (ICT) into national education curricula has commenced on a national scale. The majority of Jordanian higher education institutions employ Zoom and the university platform to disseminate and emphasize educational e-resources. To ensure the provision of superior, costlier education, Zoom and the University platform present a cohesive framework for online courses that leverages information and communication technologies. These courses encompass all disciplines provided by universities, in addition to those in the vocational sector. Additionally, the Darsak Platform, a complimentary educational resource in Jordan,

provides students with online video instructional resources that correspond to the Jordanian educational curriculum. Furthermore, e-books have gained increased accessibility due to the establishment of the National Digital Library of Jordan (NDL), a digital repository for educational resources.

The Jordanian government provides support for online education. The Department of Electronics and Information Technology (DEIT) has diligently developed technologies and tools to serve as an alternative. Efforts to enhance literacy via online education encompass content creation, research and technological development projects, human resource advancement, and faculty training (Sun & Chen, 2016). Numerous Jordanian universities employ e-learning platforms, including Moodle, Microsoft Teams, and Zoom, to facilitate online content on their institutional web servers (Fakhouri and Hamtini, 2012).

The tolerance levels of the Moodle, Microsoft Teams, and Zoom platforms affect all users. Elements including self-efficacy, age, training, and work status affect a student's behavior and decision-making on platforms such as Moodle, Microsoft Teams, and Zoom (Lu, 2010). Moreover, the physical and psychological attributes inherent in the Moodle, Microsoft Teams, and Zoom platforms can either promote or impede students' attitudes and performance (Olasina, 2019). When evaluating e-learning, it is essential to evaluate the diverse social factors that impact it. These elements encompass the educational principles upheld by both students and educators, rather than exclusively emphasizing technology tools.

The emergence of e-learning has rendered traditional classrooms obsolete. Its growth rate is extraordinary. A DEIT report from May 2018 indicates that the online education market in Jordan has expanded from 1.9 million users in 2018 to 4.5 million users by 2022. A combination of factors, such as demand, supply, and macroeconomic conditions, will drive this expansion. The findings indicate that heightened Internet penetration, an increase in smartphone users, government digital initiatives, the provision of quality services, and additional variables are the

primary catalysts for the growth. The Higher Education (2018) report ranks the following educational formats in descending order of priority: reskilling and online certification courses; primary and supplementary education; high school preparation; higher education; and language study. The numerous benefits of online education are propelling its growing popularity. This category includes delivering comprehensive, high-quality information at a competitive price while enhancing user engagement and visibility. Online schooling is progressively supplanting traditional educational techniques owing to its numerous advantages. A study by King and Boyatt (2015) on e-learning adoption as a workplace incentive reveals that students expect to access all course materials, including those from in-person sessions, online. This generation favors "pressing a button" to "turning a page." Despite students' expressed lack of confidence in online tools and resources, the survey underscored the necessity of assisting students in enhancing their skills to maximize e-learning opportunities. Phutela and Dwivedi (2019) also observe that students desire to enhance their learning without compromising convenience. The capacity to engage in online study at an individual's own speed and schedule significantly enhances self-education. It facilitates just-in-time learning. Enhancing the quality of content and developing a user-friendly system, as proposed by Lee (2006), will increase e-learning utilization. Promoting the new courses will also facilitate enrollment. E-learning facilitates individuals' preparation for global communication and dialogue (Cârstea, 2021). To assist institutions and educators in optimizing e-learning technologies, Selim (2007) delineated eight critical success factors.

Foreign Direct Investment (FDI) A substantial amount of work has investigated the challenges that developing nations encounter in the implementation of online education. Ssekakubo et al. (2011) identified that insufficient exposure to information and communication technology, ineffective marketing strategies, and inadequate Internet connectivity are the primary barriers to the extensive adoption of online learning. In 2011, Al-Alak and Alnawas published a study that clarified the factors contributing to Jordan's restricted adoption of online education. The

factors contributing to this are substandard information, insufficient infrastructure, and an absence of specialized training. This study seeks to elucidate the perceptions of students who have completed a minimum of five online courses on e-learning, as well as to identify any elements that may impact their selection of this educational approach.

3 - Methodology

Pringle et al. (2011), Eatough, Saini, and Chaudhary (2019), and Smith (2008) employed interpretative phenomenological analysis (IPA) to rigorously investigate the participants' lived experiences in this study. Research that seeks to perform comprehensive analyses of a limited number of participants through techniques like semi-structured interviews employs Interpretative Phenomenological Analysis (IPA) for evaluating qualitative data. Researchers ought to utilize Interpretative Phenomenological Analysis (IPA) to comprehend individuals' viewpoints on specific situations (Smith and Osborn, 2008). By concentrating on a particular cohort instead of attempting to generalize findings to the entire population, researchers can more effectively understand the participants' viewpoints and attain a deeper insight into the subject matter (Pietkiewicz and Smith, 2014). It produces substantial articulated findings based on established ideas and concepts, providing a more comprehensive explanation, as noted by Dipboye and Foster (2002).

The viewpoints of pupils concerning online education are significant to acknowledge. Meticulous participant selection is essential for this study to yield valuable data, and the determination of sample size is critical. Smith and Osborn (2008) assert that IPA research utilize small sample sizes, typically ranging from one to fifteen or more participants. Creswell (2012) and Chaudhary et al. (2019) indicate that the sample size for phenomenological research may vary from 2 to 25 participants. Rather than forming precipitous conclusions, IPA meticulously analyzes specific situations (Smith, 2003).

The participants for this study were chosen from a master class at Yarmouk University. The primary data for comprehending students' perspectives on e-learning was gathered via semi-structured interviews. Consequently, the researchers could comprehensively engage with each example and examine both similarities and differences, along with convergence and divergence. This study examined twenty-three individuals from various regions of North Jordan who had completed their undergraduate education at different universities in Jordan and are currently pursuing master's degrees in diverse fields. A semi-structured questionnaire was employed to collect data from comprehensive interviews.

In the examined area, students originated from diverse origins and various fields of study. The sample for this study was chosen via the purposive sampling method. Previous studies indicate that qualitative researchers typically utilize purposive sampling to identify and select instances that yield the most significant information, hence optimizing resource allocation (Patton, 2002; Etikan et al., 2016). This study aimed to discover the characteristics that promoted or hindered the utilization of online learning by selecting participants who had completed a minimum of five courses. The study sought to gather a wide array of student viewpoints on e-learning adoption by enlisting participants from several academic fields, including business, engineering, design, humanities, and law. Subsequent to securing approval from the heads of departments, the researchers extended invitations to prospective candidates. Participants were instructed to directly reach out to the researchers if they wished to participate in the study. The sample profile of the investigation is presented in Table I.

Researchers undertaking phenomenological investigations must obtain written agreement from participants (Creswell, 2013; Larsen & Adu, 2021). The ages of the twenty-three participants varied from twenty-two to twenty-nine, with fifteen women and eight males indicating their interest in participating in the study. Among the total responders, ten were in their first year post-graduate, nine were in their second year, and four were pursuing graduation. All respondents completed a

minimum of five online certification courses relevant to their careers or areas of interest.

Table 1 consist of demographic information such as: age, gender, education pursuing and stream of study

Respondent	Age	Gender	Education Pursuing)	Stream
1	23	Male	2 nd Year	Marketing
2	25	Female	2 nd Year	Pharmacy
3	28	Female	2 nd Year	Linguistics
4	22	Female	2 nd Year	French language
5	23	Female	2 nd Year	Civil engineering
6	25	Male	2 nd Year	IT
7	27	Female	2 nd Year	Marketing
8	29	Male	2 nd Year	Pharmacy
9	22	Female	2 nd Year	Math
10	24	Female	2 nd Year	Journalism
11	24	Male	2 nd Year	IT
12	26	Female	2 nd Year	Computer Science
13	27	Female	2 nd Year	Pharmacy
14	27	Male	2 nd Year	Marketing
15	26	Female	2 nd Year	Business Admiration
16	23	Female	2 nd Year	Finance
17	23	Male	2 nd Year	Business Admiration
18	23	Male	2 nd Year	Business Admiration
19	24	Female	2 nd Year	Economics
20	25	Female	2 nd Year	Law
21	25	Female	2 nd Year	English literature
22	24	Male	2 nd Year	Marketing
23	26	Female	2 nd Year	Dental hygiene

4- Data Acquisition and Analysis

Researchers employed semi-structured interviews to collect primary data for this study, facilitating in-depth inquiries and eliciting candid responses from participants. The researchers utilized an unstructured guide throughout participant interviews. Four subject-matter experts evaluated the checklist for validity and reliability, implementing required modifications in accordance with the established guidelines. We provided the revised version to four students not involved in the study to ensure the construct validity remained intact. The inquiry "What are your

thoughts on online learning courses?" constituted one of three "trigger questions" posed to participants during the initial phase, which also involved the collection of demographic data. What elements motivate you to engage in online education? "What barriers do you think diminish enthusiasm for online learning?" To eliminate ambiguity, the researcher employed clear and unequivocal questions. Interviews generally spanned 35 to 45 minutes, with an average duration of 40 minutes.

Personal expertise was employed for the comprehensive study of the data. The present study adhered to the methodologies for evaluating interview data as proposed by Moustakas (1994) and Smith and Osborn (2008). To gain a comprehensive grasp of each participant's sentiments toward e-learning, we meticulously examined the transcripts to identify salient elements. The subsequent phase involved annotating the transcripts with emergent themes derived from the prepared notes. Subsequently, we documented each thought independently from the transcript. Subsequently, we sought linkages, analyzed the themes, and categorized them based on their similarities and differences. We categorized and designated themes that had common traits.

The researchers achieved an internal consistency rate of eighty percent, coding individually and verifying the entire method. Following the categorization of the interview transcripts into themes, we aggregated the data to derive overarching themes. To ensure the study is objective and transparent, Ryan and Bernard (2000) introduced the "cutting and sorting" method. Consistency was achieved following additional discourse on the acquired results. Substantiating findings with direct quotations from respondents enhances legitimacy. Smith (2011) recommends utilizing excerpts from three or four respondents per subject for samples above eight. Although we endeavored to encapsulate the group's core and discern commonalities among members, we were unable to achieve this in order to maintain a reduced word constraint.

5 - Findings and Discussion

This section presents the findings of the IPA analysis conducted on twenty-three interviews. The results are categorized into two themes: "drivers for e-learning adoption" and "challenges that impede e-learning adoption."

5.1 Determinants that Promote the Adoption of Online Education

Researchers have highlighted easy access, affordability, user-friendliness, quality education, and opportunities as the major characteristics motivating students to use e-learning or online learning.

-Real-time connectivity

The convenience of online courses significantly attracts students, who are inclined to adopt e-learning and engage in classes via this platform. Students can access their chosen courses of study with a little click of a button. Facilitated connectivity renders it accessible to a significant population. Respondent 3 asserts that it represents progress toward a technologically advanced planet.

The perspective of students on online education

The accessibility and mobility of E-learning enable participation at any time and from any location, thereby promoting continual learning (Respondent 8). Respondent 11 asserts that the proposed solutions are entirely accessible and dependable. The primary advantage of online education is the portability of course content. The information is readily accessible, eliminating the necessity for a search (Respondent 7).

The pursuit of knowledge should not compromise student comfort. The capacity to engage in online study at an individual's own speed and schedule renders e-learning a highly pragmatic and flexible option for self-education. It facilitates just-in-time learning. According to Abad et al. (2009), students who frequently utilize the

Internet are more inclined to engage with e-learning systems. The results align with those of Smedley (2010) and Arkorful and Abaidoo (2015). Research indicates that e-learning provides greater flexibility when location and time are considered. Students are afforded the autonomy to select their preferred time and location.

- *Economic efficiency*

Due to the affordability, students are eager to enroll in online courses. Students are attracted to the plethora of online educational platforms that provide high-caliber courses at no expense.

According to Respondent 6, e-learning is neutral with respect to time and location, and is cost-effective.

- *Educational methodology*

Online education enables students without access to a teacher or coach to learn at their own speed inside the convenience of their homes, thereby conserving time and financial resources. In a nation such as Jordan, where poverty prevails, this represents a significant advantage.

If all students could access e-learning platforms online, the nation's educational system would undergo rapid transformation (Respondent 3).

Enhancing your knowledge base does not necessitate a substantial financial outlay.

Respondent 19

Due to the convenience and affordability of specialized online classes, numerous students are choosing to enrol in them alongside their standard degree programs. E-learning is a cost-effective alternative as it eliminates the need for travel for both students and learners. Moreover, it is cost-effective since it maximizes student access to educational opportunities while minimizing the necessity for physical infrastructure (Arkorful and Abaidoo, 2015).

- Enhances the subject's appeal

The students highlighted that the inherent constraints of e-learning significantly influenced their decision to use it. The incorporation of multimedia, including its interactive elements, into e-learning content can engage participants effectively. Prior research indicates that the principal impetus for adopting technology at universities is to enhance student interaction (Zingaro and Porter, 2014; Sarker et al., 2019). To enhance the quality of the learning process, e-learning employs interactive technology. It is augmenting its commitment to lifelong education (Respondent 15).

Web-based learning resembles utilizing an interactive textbook. To monitor the acquired knowledge, some individuals also utilize quizzes and activities (Respondent 2). In my opinion, the human brain effectively retains and establishes connections with visual and aural stimuli provided in moving images and videos. Respondent 23 asserts that images not only capture students' attention but also facilitate knowledge retention.

In comparison to traditional study methods, e-learning is far more stimulating. The array of multimedia options, such as podcasts, music, and photographs, is both interesting and visually appealing (Respondent 12).

The interactivity it fosters, which sustains audience engagement for extended durations, significantly pushed pupils to embrace e-learning. Bottino (2004) discovered that information and communication technology (ICT) tools can alter the methods of material delivery and acquisition, hence impacting and transforming the learning process.

- Quality education

Students seek abundant high-quality information and supplementary learning possibilities. The primary reason for the increasing popularity of online education is this. They assert that e-learning is an invaluable resource that may greatly

facilitate the acquisition of new skills, rendering it an essential component of education. They will also evaluate their performance in comparison to other developed nations. Technology enables us to explore new concepts or participate in online courses at any time. facilitate our access, integrate diverse resources in various media, and enhance our understanding and comprehension of the topics (Respondent 3). Online education enables students to access and utilize an abundance of material that is not confined to conventional textbooks (Respondent 13). Regarding overseas educational programs, where students can acquire valuable abilities acquired while seated in a room or during seminars that convene students from several colleges.

Collectively, e-learning has demonstrated to be the most efficacious approach (Respondent 11) As a fellow marketing student, I can affirm that the digital aspect is comprehensively addressed. The class possesses significant depth; hence it is prudent to effectively utilize these resources. Diverse categories of educational instruments (Respondent 14).

Students observed that it improves their ongoing education and, consequently, their employment prospects. Individuals can enhance their knowledge without constraints, as they have the autonomy to select courses according to their interests. Consequently, e-learning facilitates self-directed pace. This strategy enables each student to learn at their individual speed and pace. Numerous studies (Marc, 2002; Klein and Ware, 2003; Amer, 2007; Algahtani, 2011; Arkorful and Abaidoo, 2015) indicate that it enhances happiness and mitigates stress.

- Prospects

A multitude of factors influenced students' inclination towards online education. Extensive discourse occurred over prospective future opportunities. Their principal reason for pursuing education was, in some manner, linked to the prospect of enhancing their future or advancing their jobs. Farmer et al. (2008), Top (2012), and Jimoyiannis et al. (2017) discovered that educational blogging enhances

students' learning opportunities by facilitating resource sharing and the articulation and discussion of their ideas. The viewpoints of students on online education are significant.

I have consistently seen e-learning as quite advantageous. The online courses facilitated my acquisition of both professions, and anytime I encountered inquiries, I would seek answers on YouTube (Respondent 23). The classes enhance students' self-confidence, potentially resulting in improved employment opportunities (Respondent 7). It informs users of technical advancements that can enhance their skills for global competition (Respondent 17). The students expressed their perspectives on how e-learning can influence their professional development. They can enhance their knowledge and skill set, hence facilitating access to superior employment opportunities.

5.2-Issues with E-Learning Implementation

The emergence of online education has transformed both the classroom environment and students' study methods. The researchers analyzed the responses and identified particular challenges that impeded students' ability to utilize e-learning. The prominent challenges hindering the adoption of e-learning are technological addiction, security issues, absence of personal interaction, and fraud.

- Yearnings for electronic gadgets Several pupils believe that independent study diminishes their drive. They are being lured to engage in online activities rather than pursuing education. When afforded the chance to navigate the internet, they rapidly become disinterested. Respondent 10 indicated that excessive use may result in addiction. The issue emerges when we get dependent on and addicted to technology (Respondent 7). Currently, all individuals possess access to the Internet, a laptop, and a smartphone. If left unsupervised, kids may be more prone to partake in hazardous activities such as excessive gaming or binge-watching television, perhaps resulting in adverse health consequences. Significant concern is linked to technology usage, as noted by Bond and Goodchild (2013). This concern may

encompass an inability to utilize technology effectively and a deficiency in academic performance when confronted with technological challenges.

- Safety concerns

Students indicate that concerns over data security significantly contribute to their disinterest in e-learning. It fosters plagiarism, hence jeopardizing the student's originality. Arkorful and Abaidoo (2015) assert that monitoring or regulating behaviors such as cheating in online learning evaluations may be difficult due to the frequent use of proxy supervision. Students may be prone to cheating, piracy, and plagiarism due to the scarcity of available materials. Furthermore, there exists a concern regarding the security of these internet resources, which casts doubt on the authenticity of the student's endeavor, as anyone could potentially fulfill the assignment on their behalf (Respondent 21).

Numerous websites exploit students by imposing exorbitant fees while guaranteeing unattainable outcomes (Respondent 17). May jeopardize children's privacy by exposing them to the extensive realm of the Internet (Respondent 23).

3) Lack of physical presence

Students continue to assert that information exchange and in-person connection are essential elements of education that are deficient in the virtual platform, despite the interactive nature of e-learning. Online explanations and interpretations are less effective than in-person interactions; thus, learning is facilitated when teachers and students are physically present together.

The absence of motivation to complete the learning stems from the lack of human guidance to navigate the material (Respondent 11). The fundamental elements of Jordan's educational system are the classroom, student-teacher interaction, and the utilization of a chalkboard and chalk. The transition in contemporary society is unavoidable and essential, although identifying the optimal balance is vital

(Respondent 5). The absence of physical presence reduces the amount of practical or hands-on experience in e-learning (Respondent 23).

Students report a deficiency in motivation to engage in solitary study (Price, 2009). Due to a higher propensity for distraction in online environments, their performance may be inferior compared to a traditional classroom setting. Furthermore, pupils become disinterested in studying when they contemplate the necessity of independently navigating an online system (Abad et al., 2009). Moreover, students experience significant introspection, isolation, and loneliness while participating in online courses (Arkorful and Abaidoo, 2015; Gruber & Henriksen, 2024). This qualitative study has two primary objectives: first, to comprehend students' perceptions of e-learning adoption; and second, to identify the factors that act as facilitators or impediments to this adoption. This study's interpretative methodology has clarified students' viewpoints on and motivations for adopting e-learning. The findings of the current study encourage students to adopt e-learning to augment their knowledge. Sarkar et al. (2019) found that the majority of students exhibit excessive enthusiasm and readiness to engage with online platforms; hence, our findings align with theirs. Nonetheless, other variables influence the degree of acceptance. The findings demonstrate that students favor e-learning because of its extensive availability and accessibility. Although respondents concur that e-learning can facilitate professional development, many regard the course as lacking credibility due to its completion by an external entity. A further impetus for interest in online education is the aspiration to enhance knowledge in a specific domain or on a subject of particular fascination.

Furthermore, the utilization of interactive technology enhances engagement in learning and diminishes monotony. Nonetheless, compulsive usage may lead to addiction. The specialists in this research advised, based on their conclusions, The objectives and requirements of education, rather than those of technology, should govern the utilization of technology in the classroom. Walsh (2011) discovered that, in addition to conventional in-person training and technology-enhanced

professional development for educators, online education can be a crucial component of development programs. Technology possesses numerous potential applications as an educational instrument to enhance student performance. Technology can be significantly advantageous in content presentation and achievement assessment (Davies et al., 2013). The study's results correspond with the conclusions of Bayrak and Akcam (2017) and Phutela & Dwivedi (2020), who asserted the necessity of meticulously assessing students' learning and the efficacy of web-based learning tools to ascertain whether these tools facilitate or impede students' learning. We must exert meticulous attention in developing e-learning content, as students regard this as an opportunity for success. Akerlind and Trevitt (1999) discovered that pupils exhibit resistance to educational technology due to its diminishment of social connection opportunities. Academics require actual experience to fully comprehend concepts; thus, providing ongoing e-learning courses is insufficient. Differentiated instruction is a method to enhance the learning experience, as stated by Davies et al. (2013). The primary objective of employing differentiation in the classroom is to address each student's distinct learning needs. Online course designers must to integrate activities that augment knowledge and abilities, together with an evaluative framework to motivate students. The capacity to customize or tailor e-learning modules is likewise crucial. Online education does not resolve the educational challenges in developing countries. When utilized judiciously, they can enhance existing educational materials and augment classroom instruction. Gil Ortega and Falconer (2015) assert that contemporary education should prioritize creativity, innovation, accessibility, flexibility, and interactivity. Enhancing e-learning's tangibility can be achieved by granting users direct access to the perspectives and experiences of many individuals, communities, and cultures. Users are more inclined to feel at ease and assured in an e-learning system if its user interface is well designed and comprehensible (Abad et al., 2009).

6. Conclusion

Although online education is promising in Jordan's higher education systems, it is poised to effect substantial transformation in the forthcoming years. Better, more accessible knowledge, more adaptability, and lower prices are just a few of the ways in which technology has permeated every facet of modern life. This study emphasizes the importance of online education in expanding students' horizons. The majority of respondents agreed that online courses can help students enhance their existing curriculum. Students have greater opportunities to broaden their knowledge, develop their abilities, and become experts in a subject of their choosing. Obtaining additional credentials also improves one's employability. To improve their employment chances, students are honing their abilities in a specific field. Additionally, their thirst for knowledge draws them to the constant and high-quality content available online.

The availability of high-quality information online will positively affect students' uptake of e-learning. Affordability, real-time information availability, and engaging course materials (such as videos and PowerPoint presentations) are key factors propelling the growth of online education. A number of respondents mentioned that they tend to adhere closely to their instructors' directions. Therefore, students in an online setting do not receive the kind of guidance that would encourage them to work hard and finish the course. An obstacle to the widespread use of online education is, thus, the absence of a physical location. If taking classes online does not break the budget, students are more likely to trust them. When the cost or charge structure is more complex, there is greater mistrust. Students' security concerns about the legitimacy of e-learning lead to its avoidance. Students are eager to take advantage of online courses to boost their knowledge and competitiveness, according to the report.

7- Implications

Even though the government has launched a few programs to encourage its use, there must be more done to make the transition easier. There are still many obstacles to overcome in this regard, including a lack of clarity or organization, an aversion to technology, and trustworthiness. It will take some time for the stakeholders to adopt this long-term approach. Barakat, et al. (2022), and Abduljawad, et al. (2019), emphasized that the entire strategy is a paradigm shift from a teacher-centric to a learner-centric one. While these two perspectives may appear to be at odds with one another, they work well together to achieve educational objectives. The study's authors are certain that taking all these elements into account methodically will help to strengthen the sector overall. As a result, online education has the potential to become the best option for students in the modern world. To many, it will represent a sea change in the Jordanian educational system. Educational institutions should focus on policies and techniques that can encourage students to use online learning more frequently. A variety of measures, such as the development of high-quality content, the provision of practical experience to refine skills, the facilitation of live and interactive sessions or comprehensive question-and-answer sessions, the verification of student identity upon course completion, the eradication of fraudulent courses through rigorous oversight of online course providers, and the continual updating of online course offerings, can establish a robust foundation for e-learning. Educators can also increase enrolment by eliminating students' ignorance of available options and guiding them towards the most suitable classes among the numerous accessible options. To raise students' awareness and trust, the government should heavily promote the courses.

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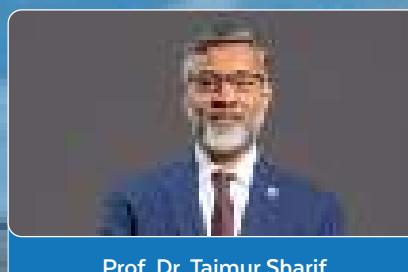
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