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ილია ბოცვაძე ბიზნესის ადმინისტრირების დოქტორი, შავი ზღვის საერთაშორისო უნივერსიტეტი, ასოცირებული პროფესორი, ევროპის უნივერსიტეტის ბიზნესისა და ტექნოლოგიების ფაკულტეტის დეკანი. (საქართველო)

ნუგზარ თოდუა ეკონომიკის მეცნიერებათა დოქტორი, ივანე ჯავახიშვილის სახელობის თბილისის სახელმწიფო უნივერსიტეტის პროფესორი. (საქართველო)

ეკატერინე ლომია პოლიტიკის მეცნიერების დოქტორი. ივანე ჯავახიშვილის სახელობის თბილისის სახელმწიფო უნივერსიტეტის კვლევით ცენტრში „საქართველოს სამეზობლოს კვლევის ინსტიტუტი“ მკვლევარი. ა(ა)იპ საქართველოს მეცნიერთა საბჭოს წევრი. (საქართველო)

ქუჯი ბიჭია (ევროპის ეკონომიკის დოქტორი, ევროპის უნივერსიტეტის ასოცირებული აფილირებული პროფესორი. (საქართველო)

ეკატერინე ნაცვლიშვილი ფილოსოფიის დოქტორი, ევროპის უნივერსიტეტის აფილირებული პროფესორი, ბიზნესის ადმინისტრირების საბაკალავრო პროგრამის ხელმძღვანელი, განათლების ხარისხის განვითარების ეროვნული ცენტრის აკრედიტაციის ექსპერტი. (საქართველო)

გოჩა თოდუა ფიზიკა-მათემატიკურ მეცნიერებათა დოქტორი, პროფესორი, ევროპის უნივერსიტეტი. (საქართველო)

თორნიკე ხოშტარია ბიზნეს ადმინისტრირების დოქტორი, ევროპის უნივერსიტეტის პროფესორი, სასწავლო უნივერსიტეტი გეომედის ჯანდაცვის ეკონომიკისა და მენეჯმენტის ფაკულტეტის დეკანი. (საქართველო)

ლია ჩარქვიშვილი ეკონომიკურ მეცნიერებათა აკადემიური დოქტორი, ევროპის უნივერსიტეტი. (საქართველო)

არჩილ ჩოჩია სამართლის დოქტორი, ტალინის ტექნოლოგიური უნივერსიტეტი. (ესტონეთი)

ლიუდმილა ალექსეიევა ასისტენტ-პროფესორი, ეკონომიკის დეპარტამენტი, დაუგავპილსის უნივერსიტეტი. (ლატვიის რესპუბლიკა)

მოშე ბარაკი ემერიტუსი პროფესორი, მეცნიერებისა და ტექნოლოგიების განათლება, ნეგევის ბენგურიონის უნივერსიტეტი. (ისრაელი)

ოლიონა ბაჟენოვა ეკონომიკის დოქტორი, ეკონომიკური კიბერნეტიკის დეპარტამენტი, ტარას შევჩენკოს სახელობის კიევის სახელმწიფო უნივერსიტეტი. (უკრაინა)

ვისემ აჯილი ბენ იუსეფი დოქტორი, ასოცირებული პროფესორი, ESLSCA პარიზის ბიზნეს სკოლა. (საფრანგეთი)

ენკარნ ალვარეს ვერდეხო დოქტორი, კვანტიტატიური მეთოდები ეკონომიკაში და ბიზნესში, გრანადას უნივერსიტეტი. (ესპანეთი)

პატრიცია გაზზოლა ასოცირებული პროფესორი, ინსუბრიის უნივერსიტეტი. (იტალია)

ფიტიმ დიარი ასოცირებული პროფესორი, ბიზნესისა და ეკონომიკის ფაკულტეტი, სამხრეთ-აღმოსავლეთ ევროპის უნივერსიტეტი. (ჩრდილოეთ მაკედონიის რესპუბლიკა)

რიმა ტამოსიუნიენე პროფესორი, ფინანსური ინჟინერიის დეპარტამენტი, ვილნიუსის გედიმინასის სახელობის ტექნიკური უნივერსიტეტი. (ლიეტუვის რესპუბლიკა)

მანუელა ტვარონოვიჩენი პროფესორი, ბიზნეს ეკონომიკისა და მენეჯმენტის დეპარტამენტი, ვილნიუსის გედიმინასის სახელობის ტექნიკური უნივერსიტეტი. (ლიეტუვის რესპუბლიკა)

რეჯინა დემიანიუკი ასისტენტ პროფესორი, სოციალურ მეცნიერებათა ფაკულტეტი, შიდელცეს უნივერსიტეტი. (პოლონეთი)

ჯოზეფა გარსია მასტანზა პროფესორი, ეკონომიკისა და ბიზნესის ადმინისტრირების დეპარტამენტი. (მალაგას უნივერსიტეტი, ესპანეთი).

იზეთ ზექირი პროფესორი, ბიზნესისა და ეკონომიკის ფაკულტეტი, სამხრეთ-აღმოსავლეთ ევროპის უნივერსიტეტი. (ჩრდილოეთ მაკედონიის რესპუბლიკა)

განნა ჟოსანი ეკონომიკის დოქტორი, ხერსონის სახელმწიფო აგრარული უნივერსიტეტი. (უკრაინა)

ძინტრა ილისკო დოქტორი, პროფესორი, დაუგავპილსის უნივერსიტეტი. (ლატვია)

მოჰამედ შაფიუდინი დოქტორი, ასისტენტ-პროფესორი, მენეჯმენტისა და ტექნოლოგიის კოლეჯი (ომანი), მკვლევარი, ამერიკის საფინანსო ასოციაციის წევრი მენეჯმენტისა და კომერციის საერთაშორისო კვლევითი ჟურნალის სარედაქციო კოლეგიის წევრი. (ომანი)

ლიუდმილა დემიდენკო ასოცირებული პროფესორი, ტარას შევჩენკოს სახელობის კიევის სახელმწიფო უნივერსიტეტი. (უკრაინა)

ვლადიმერ მენშიკოვი პროფესორი, დაუგავპილსის უნივერსიტეტი. (ლატვიის რესპუბლიკა)

ნაზიმ მუსაფარლი იმანოვი დირექტორი, ეკონომიკის ინსტიტუტი, აზერბაიჯანის მეცნიერებათა ეროვნული აკადემია. (აზერბაიჯანი)

როსიცა იალამოვა ასოცირებული პროფესორი, ლეტბრიჯის უნივერსიტეტი. (კანადა)

ოლგა ლავრინენკო ეკონომიკის დოქტორი, მკვლევარი, დაუგავპილსის უნივერსიტეტი. (ლატვიის რესპუბლიკა)

გორდონ ლ. ბრედი ლექტორი, ჩრდილოეთ კაროლინის უნივერსიტეტი, გრინსბორო. (აშშ)

ელიტა ერმოლაევა პროფესორი, ეკონომიკისა და სოციალური განვითარების ფაკულტეტი, ლატვიის სასოფლო-სამეურნეო და ტექნოლოგიების უნივერსიტეტი. (ლატვია)

სირჯე ვირკუსი დოქტორი, ციფრული ტექნოლოგიების სკოლა, ტალინის უნივერსიტეტი. (ესტონეთის რესპუბლიკა)

ინტა ოსტროვსკა პედაგოგიურ მეცნიერებათა დოქტორი, დოცენტი, დაუგავპულსის უნივერსიტეტი. (ლატვიის რესპუბლიკა)

ლინა პილელინე ბიზნეს ადმინისტრირების დოქტორი, პროფესორი, ვიტაუტას მაგნუს უნივერსიტეტი. (ლიეტუვას რესპუბლიკა)

მჰერ საჰაკიანი საერთაშორისო ურთიერთობების დოქტორი, ჩინეთის ნანჯინგის უნივერსიტეტი, ლექტორი, მეცნიერებათა ეროვნული აკადემია. დამფუძნებელი და დირექტორი, ჩინეთ-ევრაზიის პოლიტიკური და სტრატეგიული კვლევების საბჭო. (სომხეთი)

ალექსანდრ სტრატანი ეკონომიკის დოქტორი, პროფესორი, ეკონომიკური კვლევების აკადემია. (მოლდოვა)

ემანუელ მორუჩი სოციოლოგიის დოქტორი, ბრესტის დასავლეთის კათოლიკური უნივერსიტეტი, ბრესტი, ბრეტანი. ევროკომისიის «ევროპის გუნდი საფრანგეთი»-ის წევრი. CECI - ევროპის მოქალაქეობისა და იდენტობების წრის პრეზიდენტი. საფრანგეთი

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ARTICLE

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SUSTAINABILITY DISCLOSURE, CEO DUALITY, AND OWNERSHIP CONCENTRATION: EVIDENCE FROM GEORGIA

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Abstract. This study examines the determinants of corporate sustainability disclosure in Georgia, emphasizing the influence of CEO duality and ownership concentration. The absence of significant external demand for sustainability information and a robust regulatory framework often limits the voluntary release of such information. This research utilizes a sustainability disclosure scorecard developed in accordance with the EU Corporate Sustainability Reporting Directive, encompassing key environmental, social, and governance dimensions. Analyzing annual reports from all listed companies in Georgia from 2018 to 2021 through descriptive statistics and hierarchical multiple regression, findings highlight that board chair/CEO role duality and concentrated ownership significantly undermine sustainability disclosure. Specifically, CEO duality adversely affects social and governance metrics, while concentrated ownership primarily diminishes environmental transparency. These insights enhance understanding of the factors influencing corporate sustainability disclosure in emerging economies. The findings of this study may also provide valuable implications for local policymakers, who could use this information to develop more detailed and rigorous draft laws concerning sustainability disclosure requirements.

KEYWORDS: SUSTAINABILITY DISCLOSURE, ESG, DETERMINANTS, OWNERSHIP STRUCTURE, CORPORATE GOVERNANCE, EMERGING MARKET.

INTRODUCTION

It has long been recognized that business is about more than just making money, and corporate sustainability disclosure plays a significant role in enabling firms to communicate and engage with stakeholders.[1] Therefore, society in general and capital providers in particular are increasingly interested in corporate sustainability disclosure to satisfy their demand for corporate sustainability performance.[2]

1 De Villiers, C., Venter, E. R., Hsiao, P. C. K. (2017). Integrated reporting: background, measurement issues, approaches and an agenda for future research. Accounting & Finance, 57(4), pp. 937-959.

2 Pirveli, E., Ortiz-Martínez, E., Marín-Hernández, S., Thompson, P. (2025). Influencing sustainability:

Previous research has extensively explored the drivers of sustainability disclosure, yet the prevailing insights predominantly emerge from markets with strong external legitimacy and agency pressures on sustainability. The generalizability of these findings to developing economies, which are marked by distinct institutional and socio-economic contexts, remains questionable.[3] In such markets, corporate disclosure practices are shaped by comparatively weaker sustainability pressures due to underdeveloped capital markets and limited influence of non-governmental organizations, media, civil society, consumer advocates, and activists. Moreover, these economies often display reduced legitimacy aspirations and lack the robust enforcement mechanisms and corporate governance frameworks necessary to protect human and environmental rights.[4]

Recognized conventional drivers of sustainability disclosure include firm size, which indicates a company's resource capabilities, and industry sensitivity, which reflects the influence of stringent regulations.[5] The impact of other factors, such as ownership structure and corporate governance mechanisms, presents a more mixed picture.[6] For instance, dispersed ownership may encourage managerial commitment to sustainability disclosure as a strategy to reduce agency conflicts. Similarly, the separation of CEO and board chair roles, which reduces the concentration of power in the CEO, is linked to greater accountability and possibly more comprehensive sustainability disclosures.[7] These governance structures create internal pressures that can drive management to prioritize sustainability initiatives.

This study investigates the drivers of corporate sustainability disclosure among publicly listed companies in Georgia, a developing economy characterized by passive capital markets and modest media scrutiny.[8] According to the Law of Georgia on Accounting, Reporting, and Auditing (2016) (Article 7),[9] public interest entities employing over 500 individuals are required to report key non-financial indicators, including those related to environmental, social, employment, human rights, anti-corruption, and bribery issues, starting from 2018. Additionally, the evolving corporate governance landscape and significant ownership concentration in Georgia present a unique context for examining the effects of ownership structure and CEO duality on the extent of corporate sustainability disclosures.[10]

By presenting empirical evidence from a largely underexplored, developing economy, this study contributes to the sustainability disclosure literature. Unlike research focused on developed markets with robust legitimacy pressures, our findings suggest that in settings characterized by underperforming capital markets and minimal external demand for sustainability disclosures, corporate governance mechanisms play a crucial role. This paper not only provides a comprehensive conceptual framework for understanding the primary

the role of lobbyist characteristics in shaping the EU's Corporate Sustainability Reporting Directive. Sustainability Accounting, Management and Policy Journal, 16(2), pp. 415-442.

3 Qiu, Y., Shaukat, A., Tharyan, R. (2016). Environmental and social disclosures: Link with corporate financial performance. The British Accounting Review, 48(1), pp. 102-116.

4 Kuzey, C., & Uyar, A. (2017). Determinants of sustainability reporting and its impact on firm value: Evidence from the emerging market of Turkey. Journal of Cleaner Production, 143 (February), pp. 27-39.

5 Kolsi, M. C., Attayah, O. F. (2018). Environmental policy disclosures and sustainable development: Determinants, measure and impact on firm value for ADX listed companies. Corporate social responsibility and environmental management, 25(5), pp. 807-818.

6 Ismail, A. M., Latiff, I. H. M. (2019). Board diversity and corporate sustainability practices: Evidence on environmental, social and governance (ESG) reporting. International Journal of Financial Research, 10(3), pp. 31-50.

7 Hamad, S., Draz, M. U., Lai, F.-W. (2020). The impact of corporate governance and sustainability reporting on integrated reporting: A conceptual framework. Sage Open, 10(2), pp. 1-15.

8 Pirveli, E., Zimmermann, J. (2015). Time-series properties of earnings: the case of georgian stock exchange. Journal of Business and Policy Research, 10(1), pp. 70-96.

9 Law of Georgia on Accounting, Reporting and Auditing, (2016). Available at: <https://saras.gov.ge/Content/files/bugaltruli-agricxvis-angarishge-bis-da-auditis-shesaxeb-kanoni.pdf>.

10 World Bank. (2021). Georgia Corporate Governance Report on the Observance of Standards and Codes. Available at: <https://openknowledge.worldbank.org/server/api/core/bitstreams/100d9e33-fbd4-5086-a6c5-8c7d600ab360/content>.

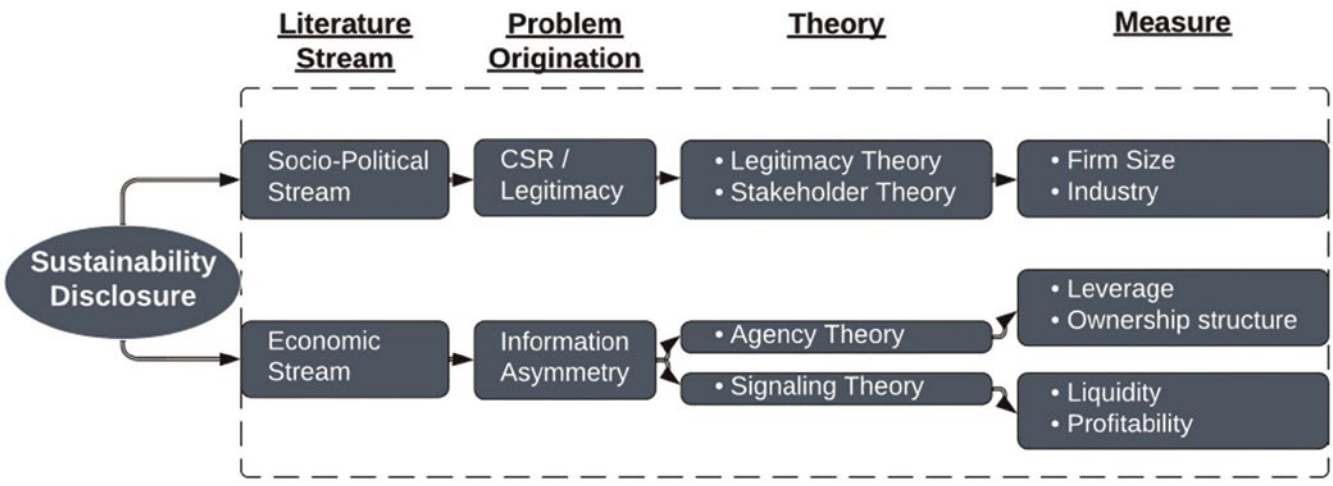

Figure 1. *Conceptual framework for sustainability disclosure (author's own)*

literature on sustainability disclosure, its origins, theoretical perspectives, and methodologies, but also aligns its approach with the EU's Corporate Sustainability Reporting Directive (CSRD), laying the groundwork for future research replication. From a regulatory perspective, our results offer valuable insights for local regulators by evaluating the adoption levels and drivers of sustainability disclosure, informing ongoing discussions, and guiding future amendments to the accounting law to enforce stricter sustainability standards.

The next section outlines the theoretical background, the institutional framework of Georgia, and our hypotheses. Section 3 details the data and methodology, Section 4 presents the results, and Section 5 provides the conclusion and discussion.

1. THEORETICAL BACKGROUND AND HYPOTHESES

1.1 Theoretical lens and conceptual framework

Corporate sustainability disclosure is a tool for communication between corporate managers and a wide range of external stakeholders: investors and other capital providers, the general public, civil society, professional associations, NGOs, regulators, employees, etc. In line with this complexity, the field uses a wide range of theories: resource-based,[11] legitimacy,[12] agency,[13] stakeholder,[14] signaling,[15] and voluntary disclosure,[16] among others. Due to the complementary and often overlapping nature of these theories, a more extensive understanding of sustainability disclosure practices is possible using a multi-theory lens to explain firms' willingness to engage in sustainability disclosure.[17] Sustainability disclosure's theoretical framework is conceptualized in Figure 1.

Socio-political sustainability disclosure stream. The literature on corporate sustainabil-

11 Russo, M. V., Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. Academy of management Journal, 40(3), pp. 534-559.

12 Gray, R., Kouhy, R., Lavers, S. (1995). Corporate social and environmental reporting. Accounting, Auditing & Accountability Journal, 8(8), pp. 47-77.

13 Jensen, M. C., Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of financial economics, 3(4), pp. 305-360.

14 Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., De Colle, S. (2010). Stakeholder theory: The state of the art. Cambridge University Press.

15 Spence, M. (1973). Job market signaling. The Quarterly Journal of Economics, 87(3), pp. 355-374. Available at: <https://www.jstor.org/stable/1882010>.

16 Verrecchia, R. E. (2001). Essays on disclosure. Journal of accounting and economics, 32(1-3), pp. 97-180.

17 Fernando, S., Lawrence, S. (2014). A theoretical framework for CSR practices: Integrating legitimacy theory, stakeholder theory and institutional theory. Journal of Theoretical Accounting Research, 10(1), pp. 149-178.

ity disclosure can be divided into two streams: socio-political and economic streams. The socio-political stream follows the corporate social responsibility (CSR) path and perceives the general public as the primary user of sustainability information, viewing environmental and social disclosure through the lens of the role of information in the organization-society dialogue, arguing that firms tend to disclose voluntarily to "legitimize" their activities and thus change public perception of the firm. A strong reputation in the social arena is thought to attract high-quality employees and reduce transaction costs (e.g., by reducing employee turnover) and distributional conflicts (e.g., by disclosure on the firm's practices in terms of diversity, equal pay, fair trade conditions, etc.). By enabling a firm to attract more competent, capable, and productive human capital, build brand loyalty, and broaden the customer base, firms are said to be able to achieve sounder financial performance.[18]

The socio-political stream uses the lenses of legitimacy and stakeholder theories, whereby firms are willing to voluntarily engage in sustainability disclosure to, first, legitimize their maneuvers and, second, balance the expectations of various stakeholders. Legitimacy theory is perhaps the most widely used theory in the field. Developed in the organizational theory era, it argues that public and societal pressures lead to environmental and social disclosures aimed at gaining social legitimacy. According to this framework, a firm's value system is congruent and aligned with society's expectations. Stakeholder theory has a more specific focus on a particular group of stakeholders, suggesting that firms disclose information even when not required to meet stakeholder expectations. Sustainability disclosure in this case is a tool through which firms communicate with external stakeholders to gain attractiveness and ensure sustainable performance.[19]

The applicability of legitimacy and stakeholder theories is often tested by examining the importance of *firm size* and *industry sensitivity* as drivers of sustainability disclosure. These theories argue that legitimacy reasons are more visible for larger firms and those operating in environmentally sensitive sectors. Larger firms are subject to greater external public pressure, and sustainability disclosure helps these firms maintain a "social contract" and successfully attract resources. Similarly, environmentally sensitive firms, such as those in the mining, fossil fuel, oil, and coal sectors, face greater risks associated with environmental damage due to their propensity for carbon and other emissions.[20]

Economic sustainability disclosure stream. The economic stream builds on the information asymmetry problem embedded in the agency theory, with a focus on investor/capital market orientation. Information asymmetry between managers and shareholders is a product of insiders' higher awareness of the firm's fundamentals compared to outsiders. To balance such asymmetry, managers voluntarily disclose sustainability information as a source of communication with the external parties.[21]

This literature stream branches into agency and signaling theories. Agency theory suggests that because quantifiable and objective (i.e., "hard") sustainability disclosure requires the use of sound management control systems to identify, measure, and report this information, such behavior is associated with increased and real economic production costs that only successful firms are likely to be willing to incur. Disclosing information about a firm's environmental and social technologies, processes, practices, and performance may not only be commercially sensitive but may also entail regulatory, contractual, reputational, and opportunity costs. For example, the provision of objective sustainability information verifies a firm's potential future (and current) actions or commitments, thereby reducing the management's discretionary capacity and increasing

18 Cormier, D., Ledoux, M. J., Magnan, M. (2011). The informational contribution of social and environmental disclosures for investors. Management Decision, 49(8), pp. 1276-1304.

19 Desai, R. (2022). Determinants of corporate carbon disclosure: A step towards sustainability reporting. Borsa Istanbul Review, 22(5), pp. 886-896.

20 Kumar, P., Firoz, M. (2018). Impact of carbon emissions on cost of debt-evidence from India. Managerial Finance, 44(12), pp. 1401-1417.

21 Healy, P. M., Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. Journal of accounting and economics, 31(1-3), pp. 405-440.

costs. As such, firms with better financial performance should be more willing, ready, and able to incur such costs by providing more extensive sustainability disclosures.[22]

Instead, signaling theory suggests that managers disclose sustainability data to send a positive signal about the firm's performance. Thus, firms with better environmental and social performance are more likely to voluntarily disclose sustainability data to differentiate themselves from their competitors and ultimately gain a competitive advantage by improving their market position.[23]

Under agency theory, scholars use *financial leverage* and *ownership structure* measures, arguing that more leveraged firms, as well as those owned by a broad range of owners, are subject to greater external pressures and therefore act more responsibly and disclose more information. As for signaling theory, scholars use *liquidity* and *profitability* measures, suggesting that "only" those firms with sound financial performance diligently disclose costly sustainability data.[24]

1.2 The context of Georgia

Demand for corporate (non)financial information in Georgia is limited. Georgia's capital markets are only able to exert meaningful pressure on managers' reporting diligence at a low level.[25] Moreover, the media and NGO sectors are associated with limited resources and high levels of political partisanship,[26] making them less likely to alter legitimacy aspirations.[27]

The Law of Georgia on Accounting, Reporting and Audit (2016) addresses non-financial disclosure, albeit superficially. Article 7 of the law requires that the management reports of the largest ("Category I" entities, as defined by the Law) Georgian public interest entities (PIEs) with an average number of employees exceeding 500 during the reporting period should include key non-financial information on the "development, performance, position and impact of the company's activities with respect to environmental, social, employment matters, human rights, anti-corruption and bribery issues". The largest PIEs have been required to file their sustainability information since 1 October 2018. All other entities are not required to file such information, and there is no direct (e.g., tax) benefit for them to do so.[28]

The Law of Georgia on Entrepreneurs was improved in 2021. By filling the gaps regarding supervisory board members, shareholder rights, meeting procedures, fiduciary duties, and capital reduction provisions, the awareness of corporate governance is increasing, but it will take time and patience to build a valid corporate governance culture. The board is a two-tier system that includes the supervisory board (board of directors) and the management board. Securities issuers are required to include a corporate governance report with a statement on compliance, internal control, risk management systems, and shareholder rights. The banks' code, additionally, requires the governance of ESG-related components, including board discussions to address ESG risks and disclosures.[29]

22 Brammer, S., Pavelin, S. (2008). Factors influencing the quality of corporate environmental disclosure. Business Strategy and the Environment, 17(2), pp. 120-136.

23 Ben-Amar, W., Chang, M., McIlkenny, P. (2017). Board gender diversity and corporate response to sustainability initiatives: Evidence from the carbon disclosure project. Journal of business ethics, 142(2), pp. 369-383.

24 Ali, W., Frynas, J. G., Mahmood, Z. (2017). Determinants of corporate social responsibility (CSR) disclosure in developed and developing countries: A literature review. Corporate social responsibility and environmental management, 24(4), pp. 273-294.

25 Pirveli, E. (2020). Earnings persistence and predictability within the emerging economy of Georgia. Journal of Financial Reporting and Accounting, 18(3), pp. 563-589.

26 Foundation, E. (2021). Georgia Media Landscape Assessment. Available at: <https://epfound.ge/static/file/202206134459-media-good-governance.-09.06.22.pdf>.

27 Pirveli, E., Thompson, P. (2022). ESG Indicators of Sustainability Reporting in Emerging Georgia: Application Levels, Determinants and the Impact. 5th International Conference on Applied Research in Management, Economics and Accounting, Barcelona, Spain.

28 Pirveli, E. (2024). Corporate disclosure timing under IFRS: the case of emerging Georgia. Journal of Financial Reporting and Accounting, 22(5), pp. 1253-1283.

29 World Bank. (2021). Georgia Corporate Governance

Local companies are closely held by the owners, with board members often bypassed and decisions made directly between management and controlling shareholders. For example, the largest direct owner of securities issuers owns more than 90% of the capital, indicating a high degree of ownership concentration. Effective enforcement and compliance practices are needed to instill the values and awareness of effective corporate governance among corporate actors. Companies tend to disclose only at a level that is sufficient for compliance, and little effort is made to go beyond the basic requirements. A mechanism that would further incentivize healthy corporate governance is lacking. Shareholder (including minority) rights are relatively well protected on paper, but in practice, there are more concerns (e.g., in terms of related party transactions). In addition, in situations involving complex transactions or where simple arm's length comparisons are not possible, supervisory boards may find it difficult to maintain objectivity due to the influence of controlling shareholders. There are instances where supervisory board members appear to put the company's interests first in the absence of clear obligations to protect shareholder interests. The average number of supervisory board members among PIEs is around 5.1, while almost half show no evidence of female representation.[30]

Overall, considering the existing external demand for information,[31, 32] alongside the development and enforcement of regulatory frameworks, the corporate sustainability environment in Georgia is not yet poised for effective sustainability disclosure.

1.3 Hypothesis development

Ownership concentration. Ownership structure can have a significant impact on sustainability disclosure. Under the ownership structure, we focus on *ownership concentration*. An increase in the dispersion of ownership can lead to an increase in information asymmetries, which in turn can lead to more frequent conflicts of interest between management and stakeholders. Disclosure on environmental and social issues can play an important role in managing such agency conflicts. As corporate ownership becomes more widely dispersed, stakeholder demands for "extracurricular" corporate activities become more diverse. In contrast, firms with concentrated ownership have fewer incentives to disclose sustainability information, as they can obtain the required information directly from the firm.[33]

In addition, more concentrated ownership, *ceteris paribus*, may be a proxy for the public's passive interest in the firm. Limited public interest, and thus limited external pressure, can only weakly motivate corporate managers to activate their inclinations toward social and environmental concern. In response to these increased demands, management is likely to disclose environmental information directly rather than communicating it separately to each investor.[34] Consequently, it is reasonable to expect that firms with more dispersed ownership will disclose a greater amount of corporate sustainability information. Therefore, we posit:

H1: Ownership concentration negatively affects corporate sustainability disclosure in Georgia.

CEO duality. As investors continue to ask for better information on how companies manage sustainability, corporate governance is seen as the foundation for building a firm's sustainability disclosure habits. Corporate governance is a system that deals with the effectiveness of relationships between the board of directors, share-

Report on the Observance of Standards and Codes. Available at: <https://openknowledge.worldbank.org/server/api/core/bitstreams/100d9e33-fbd4-5086-a6c5-8c7d600ab360/content>.

30 Ibid.

31 Pirveli, E. (2014). Accounting quality in Georgia: Theoretical overview and development of predictions. International Journal of Business and Social Science (USA), 5(3), pp. 283-293.

32 Pirveli, E. (2020). Earnings persistence and predictability within the emerging economy of Georgia. Journal of Financial Reporting and Accounting, 18(3), pp. 563-589.

33 Ruhnke, K., Gabriel, A. (2013). Determinants of voluntary assurance on sustainability reports: an empirical analysis. Journal of Business Economics, 83(9), pp. 1063-1091.

34 Cormier, D., Magnan, M. (1999). Corporate environmental disclosure strategies: determinants, costs and benefits. Journal of Accounting, Auditing & Finance, 14(4), pp. 429-451.

holders, stakeholders, and management. A sound corporate governance system focused on sustainability should help companies identify material sustainability information that enables them to properly consider the risks and opportunities related to sustainability issues and make strategic decisions.

The effectiveness of corporate governance is important in markets with weak legal frameworks, as it can serve as an effective substitute for mandatory sustainability disclosure. Accordingly, the literature suggests that firms with strong corporate governance are likely to be more responsible and demonstrate higher levels of social and environmental responsibility.[35] Scholars argue that regulators may be better served by focusing on improving corporate governance quality (rather than mandatory sustainability disclosure) as a way to increase CSR disclosure.[36] As such, boards of directors should (and do) prioritize the firm's environmental performance because it is expected to be positively related to shareholder wealth and other non-financial benefits.[37]

Under corporate governance, we refer to *CEO duality*, namely, when the CEO also chairs the board. CEO duality implies a lack of distinction between decision control and decision management.[38] While evidence of the impact of CEO duality on voluntary disclosure is mixed, we suggest that CEO duality reduces overall accountability, resulting in less sustainability transparency. CEO duality can be detrimental to shareholder interests because a powerful CEO can override the necessary checks and balances within the organization.[39] Combining the CEO and board chair roles reduces conflicts of interest, in turn reducing accountability pressures. In contrast, when the roles are separated, the chair has the ability and motivation to create an environment where other board members can contribute effectively, leading to board independence. As such, CEO duality inhibits open and honest discussions about the firm's performance. Therefore, we posit:

H2: CEO duality negatively affects corporate sustainability disclosure in Georgia.

2. METHOD

We examine all Georgian public companies granted this status for the fiscal year 2021. These companies are allowed to publicly issue their shares on the local capital market. In addition, we expanded the sample to include companies that voluntarily expressed interest in participating in the Best Annual Reporting and Transparency Award (BARTA). In this way, we cover the entire population of listed companies and a significant portion of the largest Georgian companies that are likely to report at least some sustainability information.

The financial variables were manually extracted from the annual reports of the sampled firms, which we retrieved from the official website of the Ministry of Finance of Georgia (https://reportal.ge/en). The analysis covers the period 2018–2021. After eliminating observations with missing data, the final sample consists of 36 firms and 140 firm-year observations.

Our objective is to identify the drivers of corporate sustainability disclosure. In line with the literature, we construct a sustainability disclosure scorecard based on the EU's CSRD (2022, Article 19b), which is aligned with the generally accepted framework and guiding principles of the Global Reporting Initiative (GRI).[40, 41]

35 Haniffa, R. M., Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. Journal of Accounting and Public Policy, 24(5), pp. 391-430.

36 Chan, M. C., Watson, J., & Woodliff, D. (2014). Corporate governance quality and CSR disclosures. Journal of Business Ethics, 125(September), pp. 59-73.

37 De Villiers, C., Naiker, V., Van Staden, C. J. (2011). The effect of board characteristics on firm environmental performance. Journal of Management, 37(6), pp. 1636-1663.

38 Fama, E. F., Jensen, M. C. (1983). Separation of ownership and control. The journal of law and Economics, 26(2), pp. 301-325.

39 Cheng, E. C., Courtenay, S. M. (2006). Board composition, regulatory regime and voluntary disclosure. The international journal of accounting, 41(3), pp. 262-289.

40 Orazalin, N., Mahmood, M. (2020). Determinants of GRI-based sustainability reporting: evidence from an emerging economy. Journal of Accounting in Emerging Economies, 10(1), pp. 140-164.

41 Pirveli, E., Thompson, P. (2022). ESG Indicators of Sustainability Reporting in Emerging Georgia: Application Levels, Determinants and the Impact. 5th

Our sustainability disclosure scorecard includes general parameters and ESG indicators. General attributes focus on report content and presentation, covering regulatory basis, conciseness, reliability, completeness, consistency, and comparability. For instance, the regulatory basis assesses whether reports follow international frameworks. The environmental dimension evaluates corporate interactions with nature, including climate change mitigation, water and marine issues, resource efficiency, circular economy, air pollution, and biodiversity. The social dimension addresses diversity, equality, and workplace safety, covering equal opportunities (gender equality, pay equity, inclusion of people with disabilities, training), working conditions (wages, job security, social dialogue, work-life balance, safe work environments), and respect for human rights. The governance aspect assesses management's role in sustainability, business ethics (anti-corruption, anti-bribery), political engagement (lobbying), stakeholder relationships (payment practices), and internal control systems for disclosure (CSRD, 2022).

We build a sustainability disclosure scorecard by manually going through the annual reports of each company and coding the content according to the sustainability disclosure scorecard. We code the relevant sections and sentences of each company's annual reports for each year, paying attention to the use of graphic illustrations, as recommended by the CSRD framework.

We analyze 140 annual reports, classifying the text of each report according to its thematic content: a) whether the disclosure states a certain approach (e.g., a support for gender balance) at the policy level, b) whether concrete actions are shown that supports the stated policy (e.g., more women hired in the most recent recruitment to achieve the stated gender balance goal), and c) whether the final result (e.g., the "right" gender balance between men and women in the workforce) has been achieved and disclosed (at all levels of management). We used this classification for each of the aforementioned ESG sustainability disclosure indicators. We also considered linguistic attributes, such as the semantic nature of the information provided, and distinguished text units by type of measure, such as non-quantitative (e.g., support for climate change action) and quantitative (e.g., support for climate change action following the Paris Agreement threshold of 1.5ºC of global warming).[42]

To ensure the consistency and reliability of the classification procedure, we conducted a pre-test to verify the authors' coding rules and approaches. We also re-tested the comparability of our results with the BARTA award scores for companies that participated in the competition. The coefficient of agreement, and thus the ratio of pairwise inter-judge agreement to total pairwise judgments, is above acceptable levels in both cases.

Our model incorporates the two commonly used independent variables: *firm size* (log of total assets)[43] and *industry sensitivity* (real estate, construction, and the financial sector).[44] Our variables of interest are *ownership concentration* (% of capital owned by the largest shareholder)[45] and *CEO duality* (dummy variable for CEO role duality that takes the value 1 if the CEO and board chair are the same person, and 0 otherwise).[46] In addition, we use some control variables that have been reported to be significant in driving sustainability disclosure in emerging economies, including *reg-*

International Conference on Applied Research in Management, Economics and Accounting, Barcelona, Spain.

42 Stacchezzini, R., Melloni, G., Lai, A. (2016). Sustainability management and reporting: the role of integrated reporting for communicating corporate sustainability management. Journal of Cleaner Production, 136(November), pp. 102-110.

43 Kolsi, M. C., Attayah, O. F. (2018). Environmental policy disclosures and sustainable development: Determinants, measure and impact on firm value for ADX listed companies. Corporate social responsibility and environmental management, 25(5), pp. 807-818.

44 Hassan, A., Elamer, A. A., Fletcher, M., Sobhan, N. (2020). Voluntary assurance of sustainability reporting: Evidence from an emerging economy. Accounting Research Journal, 33(2), pp. 391-410.

45 Faisal, F., Situmorang, L. S., Achmad, T., Prastiwi, A. (2020). The role of government regulations in enhancing corporate social responsibility disclosure and firm value. The Journal of Asian Finance, Economics and Business (JAFEB), 7(8), pp. 509-518.

46 Hamad, S., Draz, M. U., Lai, F.-W. (2020). The impact of corporate governance and sustainability reporting on integrated reporting: A conceptual framework. Sage Open, 10(2), pp. 1-15.

ulation (a dummy variable for mandatory disclosure that takes value 1 for firms subject to mandatory sustainability disclosure according to the 2016 Law of Georgia, and 0 otherwise),[47] *foreign ownership* (dummy variable that takes value 1 if a firm is owned by a foreign shareholder, and 0 otherwise),[48] *financial leverage* (total liabilities over total assets),[49] *profitability* (net income over total revenues; with alternative values such as ROA and ROE),[50] *Big 4* (a dummy variable that takes value 1 if a report was audited by one of the Big 4, and 0 otherwise), and *language* (a dummy variable that takes value 1 if the annual report was prepared both in Georgian and English, and 0 otherwise).[51]

3. RESULTS AND ANALYSIS

3.1 Descriptive statistics

Table I presents descriptive statistics of the sustainability scorecard and financial variables for Georgian listed companies. The average sustainability score stands at 34%, highlighting relatively low disclosure practices compared to EU standards.[52] Notably, 22 observations (16%) completely lack sustainability information. Despite a nascent regulatory framework, certain foreign-listed entities, particularly banks, demonstrate robust reporting, adhering to international standards like the TCFD and disclosing comprehensive greenhouse gas emissions data.

The sustainability disclosure scorecard reveals an uneven emphasis across its dimensions, with the general criterion achieving the highest average at 10.3 points out of 25. This reflects a trade-off between conciseness and completeness, where efforts to provide thorough information might result in lower conciseness scores. The ESG pillars show varying levels of reporting depth: environmental issues scored the lowest at 7 points, governance at 7.7, and social issues at 9.5. Environmental disclosures are sparse, with 40% of reports omitting this data entirely, though some engagement in resource use and recycling is noted.

Social sustainability metrics are more consistently addressed, with similar scores across their sub-pillars. However, while companies often express a commitment to human rights and gender equality, actual reporting on relevant KPIs and detailed statistics on gender balance in leadership remains scarce and skewed. In one of the cases, although gender balance is postulated as a high priority, the figures show a female-to-male ratio of 4 to 1. Gender balance is often interpreted as having no less than 50% female employees, but the same does not apply to males.

In the governance dimension, Georgian companies fare better in areas like anti-corruption, bribery, customer relations, and internal control mechanisms; however, there is a notable lack of disclosure concerning political engagements and lobbying. This omission is particularly evident among major financial institutions with alleged political affiliations, suggesting a deliberate avoidance of disclosing such sensitive connections. Moreover, risk mitigation committees rarely address sustainability issues like climate change, except in the largest internationally listed banks (see Table I).

47 Faisal, F., Situmorang, L. S., Achmad, T., Prastiwi, A. (2020). The role of government regulations in enhancing corporate social responsibility disclosure and firm value. The Journal of Asian Finance, Economics and Business (JAFEB), 7(8), pp. 509-518.

48 Matuszak, Ł., Różańska, E. (2020). Online corporate social responsibility (CSR) disclosure in the banking industry: evidence from Poland. Social Responsibility Journal, 16(8), pp. 1191-1214.

49 Li, D., Huang, M., Ren, S., Chen, X., Ning, L. (2018). Environmental legitimacy, green innovation, and corporate carbon disclosure: Evidence from CDP China 100. Journal of business ethics, 150, pp. 1089-1104.

50 Masoud, N., Vij, A. (2021). The effect of mandatory CSR disclosure on firms: empirical evidence from UAE. International Journal of Sustainable Engineering, 14(3), pp. 378-389.

51 Orazalin, N., Mahmood, M. (2020). Determinants of GRI-based sustainability reporting: evidence from an emerging economy. Journal of Accounting in Emerging Economies, 10(1), pp. 140-164.

52 Gatti, L., Seele, P. (2014). Evidence for the prevalence of the sustainability concept in European corporate responsibility reporting. Sustainability Science, 9(May), pp. 89-102.

TABLE I. DESCRIPTIVE STATISTICS OF SUSTAINABILITY DISCLOSURE SCORECARD AND FINANCIAL VARIABLES

	Mean	SD	Min	P25	P50	P75	Max
Part A: Sustainability variables							
SUST Score (from max 100):	**34.44**	**25.79**	**0.00**	**13.00**	**32.00**	**57.50**	**92.00**
GEN Score (from max 25):	**10.29**	**6.77**	**0.00**	**5.00**	**10.00**	**17.00**	**24.00**
Regulatory basis	2.99	1.74	0.00	2.00	3.00	4.00	6.00
Conciseness	2.21	1.62	0.00	1.00	2.00	3.00	6.00
Reliability and completeness	2.22	1.63	0.00	1.00	2.00	3.50	6.00
Consistency and comparability	2.86	2.18	0.00	1.00	3.00	4.00	7.00
ENV Score (from max 25):	**6.95**	**7.14**	**0.00**	**0.00**	**6.00**	**12.50**	**24.00**
Climate change mitigation	1.24	1.36	0.00	0.00	1.00	2.00	5.00
Climate change adaptation	1.05	1.18	0.00	0.00	1.00	2.00	4.00
Water and marine resources	0.77	1.16	0.00	0.00	0.00	1.50	4.00
Resource use and circular economy	1.61	1.68	0.00	0.00	1.00	3.00	4.00
Pollution	1.17	1.34	0.00	0.00	1.00	2.00	4.00
Biodiversity and ecosystems	1.10	1.20	0.00	0.00	1.00	2.00	4.00
SOCL Score (from max 25):	**9.50**	**7.70**	**0.00**	**3.00**	**8.00**	**18.00**	**24.00**
Equal opportunities	3.24	2.74	0.00	1.00	3.00	5.50	8.00
Working conditions	3.18	2.51	0.00	1.00	3.00	5.00	8.00
Respect for human rights	3.08	2.71	0.00	0.00	2.00	6.00	8.00
GOV Score (from max 25):	**7.70**	**6.19**	**0.00**	**2.00**	**7.00**	**12.00**	**24.00**
The role of adm., manag. and superv. bodies	1.09	1.24	0.00	0.00	1.00	1.00	5.00
Business ethics and corporate culture	1.88	1.89	0.00	0.00	1.00	4.00	5.00
Political engagements of the undertaking	0.65	0.90	0.00	0.00	0.00	1.00	4.00
Management and quality of relationships	1.70	1.63	0.00	0.00	2.00	3.00	5.00
Internal control and risk management systems	2.39	1.56	0.00	1.00	3.00	3.00	5.00
Part B: Financial variables							
SIZE (in 1000 GEL)	1,202,143	3,345,121	3,453	55,223	177,493	487,741	14,500,000
PROF	6%	39%	-104%	-3%	9%	27%	68%
LEV	68%	39%	5%	37%	73%	88%	170%

Notes: SUST_Score stands for a sustainability score that varies between 0 and 100 and incorporates general attributes and ESG metrics of the sustainability disclosure. SIZE is given in 1,000 GEL (3 GEL = 1 USD). SIZE, PROF, and LEV are winsorized at 5%. N=140.

Table I (Part B) details the financial characteristics of the sample, encompassing profitability, firm size, and leverage. The average profitability is 6%, with a median of 9%, indicating some variability in financial performance among the firms. The distribution of total assets, measured in thousands of Georgian Lari (GEL), is highly skewed: while the mean assets amount to GEL 1,202 million, influenced by large banks, the 75th percentile firm holds considerably less, at GEL 488 million. This skewness reflects the disproportionate impact of a few large entities on the sample's average. The financial leverage across the firms is substantial yet typical for the sector, with total liabilities averaging 68% of total assets, displaying a normal distribution across the dataset.

A descriptive table (un-tabulated) drops down the sustainability disclosure score by industry and year. The dataset includes four primary industry groups: finance (39 observations), construction and real estate (22), manufacturing (32), and a diverse "other" category (47 observations), encompassing sectors like healthcare, electricity, accommodation, retail, and transport. Sustainability disclosure varies significantly across industries. The finance sector leads with a score of 49 out of 100, reflecting its pivotal economic role and stringent regulatory oversight. The environmentally sensitive construction and real estate sector scores 40, outperforming finance in environmen-

TABLE II. DETERMINANTS OF SUSTAINABILITY DISCLOSURE.

	SUSTAINABILITY DISCLOSURE				
	SUST Score	**GEN Score**	**ENV Score**	**SOCL Score**	**GOV Score**
Main Independent Variables:					
SIZE	0.08***	0.02***	0.02***	0.03***	0.02***
	(8.75)	(6.98)	(8.28)	(9.00)	(5.69)
IND_SENSITIVITY	0.08*	0.01	0.01	0.03**	0.03***
	(1.82)	(0.62)	(0.61)	(2.36)	(2.94)
R^2	0.539	0.436	0.456	0.476	0.550
F for R^2	80.208***	52.926***	57.341***	62.172***	83.586***
Variables of Interest					
%_LARGEST_OWNER	-0.12*	-0.03	-0.07***	-0.02	0.00
	(-1.93)	(-1.62)	(-3.78)	(-1.15)	(0.06)
CEO_DUALITY	-0.08**	-0.02**	-0.02	-0.02**	-0.02*
	(-2.16)	(-2.12)	(-1.52)	(-2.12)	(-1.96)
ΔR^2	0.056	0.083	0.062	0.046	0.038
F for ΔR^2	4.577***	5.749***	4.271***	3.195**	3.048**
Control Variables:					
Included	Yes	Yes	Yes	Yes	Yes
N	140	140	140	140	140
R^2	0.61	0.53	0.53	0.56	0.59
R^2 adj.	0.58	0.49	0.49	0.52	0.56
F-stat	51.53***	26.46***	24.91***	51.58***	55.36***

tal reporting. Manufacturing lags with an average sustainability score of only 12. The "other" sectors achieve a score of 35. Yearly data shows little variation, with scores slightly increasing from an average of 32-33 points in 2018-2019 to 36-37 in 2020-2021. Sustainability practices, once reported, tend to persist in subsequent reports, exemplified by repeated mentions of initiatives like the Green Box campaign.

Pearson correlations (un-tabulated) highlight associations between the model variables. The SUST_Score strongly correlates with its components ($r > 0.88$, $p < 0.01$) and general attributes ($r = 0.97$, $p < 0.01$). It also has significant correlations with firm size ($r = 0.70$), industry sensitivity ($r = 0.38$), mandatory disclosure ($r = 0.38$), CEO duality ($r = -0.47$), Big 4 ($r = 0.37$), and reporting language ($r = 0.24$), all at $p < 0.01$. No association is found between firm profitability and sustainability levels. Variance Inflation Factors (VIFs) remain below 2, confirming no multicollinearity concerns.

3.2 Regression analysis

Table II presents the results of the OLS fixed effects regressions on the determinants of sustainability disclosure. The regression for sustainability disclosure (SUST Score) (column 1) is accompanied by the regressions for the sustainability pillars: general (GEN Score) and ESG (ENV Score, SOCL Score, and GOV Score) (columns 2-5).

The adjusted R-squared of the SUST Score model is 58%, implying good power in explaining

the variation of the sustainability scorecard data points around their mean. The power of the model is higher compared to similar studies conducted in emerging markets.[53] The hierarchical model regressions show that firm size (SIZE_log: β = 0.08, $p < 0.01$) and industry dummy (IND_SENSITIVITY: β = 0.08, $p < 0.1$) are the main drivers of sustainability disclosure. They alone can explain 54% of the variation of the sustainability scorecard around its mean. Larger companies and those operating in more regulated sectors provide significantly more sustainability information than their counterparts. Larger firms, and hence with more resources, are more likely to disclose more scrupulous sustainability information, which is consistent with legitimacy theory. Size is a significant variable ($p < 0.01$) in all five regressions. Larger firms tend to disclose more on all four pillars: general, environmental, social, and governance. Including the variables of interest increases the adjusted R-squared of the model, but only by 2% (see Table II).

Control variables include: mandatory model of reporting, profitability, financial leverage, Big4 dummy, financial report language dummy, foreign ownership, and board diversity. Notes: t statistics in parentheses; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$. VIF highest value = 2.14.

Observing the coefficients of the variables of interest, we note that the results support both H1 and H2. Ownership concentration (%_LARGEST_OWNER: β = – 0.12, p < 0.1) and CEO duality (CEO_DUALITY: β = – 0.08, p < 0.05) both have a negative impact on sustainability disclosure. This implies that companies with more concentrated ownership are likely to exert weaker controlling mechanisms, reducing transparency and accountability, and therefore tend to provide less detailed sustainability disclosure information. Similarly, companies where CEOs simultaneously serve as board members and key decision-makers are also inclined to provide less comprehensive sustainability disclosures, likely due to reduced oversight and checks on management. These findings align with prior studies, which suggest that dispersed ownership and independent board structures contribute to more robust sustainability reporting practices.

53 Desai, R. (2022). Determinants of corporate carbon disclosure: A step towards sustainability reporting. Borsa Istanbul Review, 22(5), 886-896.

Conclusion, Discussion, and Limitations

This study investigates the role of CEO duality and ownership concentration on corporate sustainability disclosure in the context of Georgia. Based on 140 unique firm-year observations of the largest (listed) Georgian companies, our findings suggest a relatively limited prevalence of sustainability disclosure among firms listed on the Georgian capital market compared to more developed contexts.[54] The observed low level of sustainability disclosure is likely due to limited resources and a scarce awareness of the importance of sustainability disclosure as a tool for communicating with external stakeholders.

In the context of the pillars of sustainability disclosure, there is a comparatively stronger emphasis on social issues, while environmental issues receive relatively less attention. This finding is consistent with studies conducted in emerging markets, suggesting that firms in developing contexts often struggle to address both social and environmental dimensions simultaneously.[55] Limited resources coupled with the costs associated with sustainability disclosure appear to force firms in developing economies into a trade-off between the two dimensions. As a result, the social pillar tends to receive more disclosure, as there is greater public awareness and direct interest in working conditions, wages, workplace safety, and gender equality. This contrasts with the relatively indirect and distant perceptions of climate change. Societal focus in developing economies is often on short – and medium-term goals related to basic human needs, rather than the more future-oriented "premium" goals related to environmental protection, which tend to come to the fore only after immediate needs have been met.[56]

At the multivariate level, we show that firm

54 Gatti, L., Seele, P. (2014). Evidence for the prevalence of the sustainability concept in European corporate responsibility reporting. Sustainability Science, 9(May), pp. 89-102.

55 Ching, H. Y., Gerab, F., Toste, T. H. (2017). The quality of sustainability reports and corporate financial performance: Evidence from Brazilian listed companies. Sage Open, 7(2), 2158244017712027.

56 Belal, A. R., Cooper, S. M., Khan, N. A. (2015). Corporate environmental responsibility and accountability: what chance in vulnerable Bangladesh? Critical Perspectives on Accounting, 33(December), pp. 44-58.

size and industry sensitivity are the main drivers of sustainability disclosure, consistent with prior studies.[57] In a developing context with limited external demand, we show that it is the mandatory nature and thus the regulatory burden that pushes firms to engage in socially and environmentally responsible behavior.

Aligning with our hypotheses, we show that ownership concentration and corporate governance mechanisms play a significant role in the propensity of firms to report on sustainability. Our analysis also suggests that those firms with a more dispersed ownership structure and separate CEO/chair roles report more on sustainability issues. These findings are consistent with the existing literature, which suggests that ownership dispersion positively impacts the extent of sustainability disclosure.[58] Furthermore, our study supports previous research that has found a negative impact of CEO duality on the extent of sustainability disclosure.[59]

Better sustainability disclosure practices can be achieved not only by strengthening external demand for sustainability issues but also by improving internal corporate governance mechanisms. The local regulator can play an important role in improving the sustainability disclosure practices in Georgia. The current regulatory framework for non-financial disclosure is general and does not specify the details, format, and order of sustainability disclosure. With the development of the European Sustainability Reporting Standards, it is hoped that the next draft of the Accounting Law of Georgia will more specifically define the sustainability disclosure requirements.

Nevertheless, our study has some limitations. First, despite the detailed manual content analysis of the firm's annual reports, it is difficult to assess whether the results can be generalized to the Georgian population or beyond. Our analysis considers four consecutive years (2018–2021), and the sample of the largest Georgian firms may not provide a holistic picture of sustainability disclosure in Georgia. Beyond listed companies (as is the case for Category III and IV companies), sustainability disclosure is likely to be even less common. Future research could extend our study using different samples to test our findings. Second, measuring the quality of sustainability disclosure by quantifying the notional information provided may be biased because codification is susceptible to the subjectivity of the context and the measurer. We evaluated all companies using the same matrix, with equal weighting given to the "general" and ESG components. It may be the case that for a group of companies, reporting on certain sustainability elements may be less relevant due to the nature of their operations. In addition, different ESG components in the matrix have different numbers of elements, but the same weight (25%) is assigned to each, resulting in an unbalanced score if the scorer assigns the lower points with less consideration and the higher points with more rigor. We compared our findings to the BARTA award results, and the analysis does not reveal any material differences. The comparative analysis across companies and sectors also remains valid. Finally, our models capture some potentially important determinants of sustainability disclosure, with explanatory power often exceeding 50%. Nevertheless, future studies could attempt to measure and include variables such as media coverage/reach, sustainability awareness, and so forth, at the firm level.

57 Bhatia, A., Tuli, S. (2017). Corporate attributes affecting sustainability reporting: an Indian perspective. International Journal of Law and Management, 59(3), pp. 322-340.

58 Matuszak, Ł., Różańska, E. (2020). Online corporate social responsibility (CSR) disclosure in the banking industry: evidence from Poland. Social Responsibility Journal, 16(8), pp. 1191-1214.

59 Lassoued, N., Khanchel, I. (2023). Voluntary CSR disclosure and CEO narcissism: the moderating role of CEO duality and board gender diversity. Review of Managerial Science, 17(3), pp. 1075-1123.

BIBLIOGRAPHY:

1. Ali, W., Frynas, J. G., Mahmood, Z. (2017). Determinants of corporate social responsibility (CSR) disclosure in developed and developing countries: A literature review. Corporate social responsibility and environmental management, 24(4);
2. Belal, A. R., Cooper, S. M., Khan, N. A. (2015). Corporate environmental responsibility and accountability: what chance in vulnerable Bangladesh? Critical Perspectives on Accounting, 33(December);
3. Ben-Amar, W., Chang, M., McIlkenny, P. (2017). Board gender diversity and corporate response to sustainability initiatives: Evidence from the carbon disclosure project. Journal of business ethics, 142(2);
4. Bhatia, A., Tuli, S. (2017). Corporate attributes affecting sustainability reporting: an Indian perspective. International Journal of Law and Management, 59(3);
5. Brammer, S., Pavelin, S. (2008). Factors influencing the quality of corporate environmental disclosure. Business Strategy and the Environment, 17(2);
6. Chan, M. C., Watson, J., Woodliff, D. (2014). Corporate governance quality and CSR disclosures. Journal of business ethics, 125(September);
7. Cheng, E. C., Courtenay, S. M. (2006). Board composition, regulatory regime and voluntary disclosure. The international journal of accounting, 41(3);
8. Ching, H. Y., Gerab, F., Toste, T. H. (2017). The quality of sustainability reports and corporate financial performance: Evidence from Brazilian listed companies. Sage Open, 7(2), 2158244017712027;
9. Cormier, D., Ledoux, M. J., Magnan, M. (2011). The informational contribution of social and environmental disclosures for investors. Management Decision, 49(8);
10. Cormier, D., Magnan, M. (1999). Corporate environmental disclosure strategies: determinants, costs and benefits. Journal of Accounting, Auditing & Finance, 14(4);
11. De Villiers, C., Naiker, V., Van Staden, C. J. (2011). The effect of board characteristics on firm environmental performance. Journal of Management, 37(6);
12. De Villiers, C., Venter, E. R., Hsiao, P. C. K. (2017). Integrated reporting: background, measurement issues, approaches and an agenda for future research. Accounting & Finance, 57(4);
13. Desai, R. (2022). Determinants of corporate carbon disclosure: A step towards sustainability reporting. Borsa Istanbul Review, 22(5);
14. Faisal, F., Situmorang, L. S., Achmad, T., Prastiwi, A. (2020). The role of government regulations in enhancing corporate social responsibility disclosure and firm value. The Journal of Asian Finance, Economics and Business (JAFEB), 7(8);
15. Fama, E. F., Jensen, M. C. (1983). Separation of ownership and control. The journal of law and Economics, 26(2);
16. Fernando, S., Lawrence, S. (2014). A theoretical framework for CSR practices: Integrating legitimacy theory, stakeholder theory and institutional theory. Journal of Theoretical Accounting Research, 10(1);
17. Foundation, E. (2021). Georgia Media Landscape Assessment. Available at: <https://epfound.ge/static/file/202206134459-media-good-governance.-09.06.22.pdf>;
18. Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., De Colle, S. (2010). Stakeholder theory: The state of the art. Cambridge University Press;
19. Gatti, L., Seele, P. (2014). Evidence for the prevalence of the sustainability concept in European corporate responsibility reporting. Sustainability Science, 9(May);
20. Gray, R., Kouhy, R., Lavers, S. (1995). Corporate social and environmental reporting. Accounting, Auditing & Accountability Journal, 8(8);
21. Hamad, S., Draz, M. U., Lai, F.-W. (2020). The impact of corporate governance and sustainability reporting on integrated reporting: A conceptual framework. Sage Open, 10(2);
22. Haniffa, R. M., Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. Journal of Accounting and Public Policy, 24(5);

23. Hassan, A., Elamer, A. A., Fletcher, M., Sobhan, N. (2020). Voluntary assurance of sustainability reporting: Evidence from an emerging economy. Accounting Research Journal, 33(2);
24. Healy, P. M., Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. Journal of accounting and economics, 31(1-3);
25. Ismail, A. M., Latiff, I. H. M. (2019). Board diversity and corporate sustainability practices: Evidence on environmental, social and governance (ESG) reporting. International Journal of Financial Research, 10(3);
26. Jensen, M. C., Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of financial economics, 3(4);
27. Kolsi, M. C., Attayah, O. F. (2018). Environmental policy disclosures and sustainable development: Determinants, measure and impact on firm value for ADX listed companies. Corporate social responsibility and environmental management, 25(5);
28. Kumar, P., Firoz, M. (2018). Impact of carbon emissions on cost of debt-evidence from India. Managerial Finance, 44(12);
29. Kuzey, C., Uyar, A. (2017). Determinants of sustainability reporting and its impact on firm value: Evidence from the emerging market of Turkey. Journal of Cleaner Production, 143(February);
30. Lassoued, N., Khanchel, I. (2023). Voluntary CSR disclosure and CEO narcissism: the moderating role of CEO duality and board gender diversity. Review of Managerial Science, 17(3);
31. Law of Georgia on Accounting, Reporting and Auditing, (2016). Available at: <https://saras.gov.ge/Content/files/bugaltruli-agricxvis-angarishgebis-da-auditis-shesaxeb-kanoni.pdf>;
32. Li, D., Huang, M., Ren, S., Chen, X., Ning, L. (2018). Environmental legitimacy, green innovation, and corporate carbon disclosure: Evidence from CDP China 100. Journal of business ethics, 150;
33. Masoud, N., Vij, A. (2021). The effect of mandatory CSR disclosure on firms: empirical evidence from UAE. International Journal of Sustainable Engineering, 14(3);
34. Matuszak, Ł., Różańska, E. (2020). Online corporate social responsibility (CSR) disclosure in the banking industry: evidence from Poland. Social Responsibility Journal, 16(8);
35. Orazalin, N., Mahmood, M. (2020). Determinants of GRI-based sustainability reporting: evidence from an emerging economy. Journal of Accounting in Emerging Economies, 10(1);
36. Pirveli, E. (2014). Accounting quality in Georgia: Theoretical overview and development of predictions. International Journal of Business and Social Science (USA), 5(3);
37. Pirveli, E. (2015). Financial statement quality: First evidence from the Georgian stock exchange Shaker Verlag, Aachim, Germany;
38. Pirveli, E. (2020). Earnings persistence and predictability within the emerging economy of Georgia. Journal of Financial Reporting and Accounting, 18(3);
39. Pirveli, E. (2024). Corporate disclosure timing under IFRS: the case of emerging Georgia. Journal of Financial Reporting and Accounting, 22(5);
40. Pirveli, E., Ortiz-Martínez, E., Marín-Hernández, S., Thompson, P. (2025). Influencing sustainability: the role of lobbyist characteristics in shaping the EU's Corporate Sustainability Reporting Directive. Sustainability Accounting, Management and Policy Journal, 16(2);
41. Pirveli, E., Thompson, P. (2022). ESG Indicators of Sustainability Reporting in Emerging Georgia: Application Levels, Determinants and the Impact. 5th International Conference on Applied Research in Management, Economics and Accounting, Barcelona, Spain;
42. Pirveli, E., Zimmermann, J. (2015). Time-series properties of earnings: the case of georgian stock exchange. Journal of Business and Policy Research, 10(1);
43. Qiu, Y., Shaukat, A., Tharyan, R. (2016). Environmental and social disclosures: Link with corporate financial performance. The British Accounting Review, 48(1);
44. Ruhnke, K., Gabriel, A. (2013). Determinants of voluntary assurance on sustainability reports: an empirical analysis. Journal of Business Economics, 83(9);
45. Russo, M. V., Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. Academy of management Journal, 40(3);

46. Spence, M. (1973). Job market signaling. The Quarterly Journal of Economics, 87(3);
47. Stacchezzini, R., Melloni, G., Lai, A. (2016). Sustainability management and reporting: the role of integrated reporting for communicating corporate sustainability management. Journal of Cleaner Production, 136(November);
48. Verrecchia, R. E. (2001). Essays on disclosure. Journal of accounting and economics, 32(1-3);
49. World Bank. (2021). Georgia Corporate Governance Report on the Observance of Standards and Codes. Available at: <https://openknowledge.worldbank.org/server/api/core/bitstreams/100d9e33-fbd4-5086-a6c5-8c7d600ab360/content>.

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ASYMMETRIC EFFECT OF MONETARY AND FISCAL POLICY UNCERTAINTY ON THE ENERGY TRANSITION: EVIDENCE FROM THE UNITED STATES

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Abstract. This research attempts to investigate how uncertainty in fiscal policy (FPU) and monetary policy (MPU) affects the US energy transition. While previous literature took the total renewable energy consumption (REC) as an indicator for the energy transition, this study uses different renewable energies across different sources, including solar, hydropower, wind, and biomass. Then, the novel multivariate quantile on quantile regression (MQQR) approach and time-varying nonparametric quantile causality (TVNQC) methods were applied in the period from 2000 to 2023. The MQOQ findings demonstrate a robust asymmetry between MPU, FPU, and all renewable energy sources, where MPU has the biggest impact, meanwhile, biomass energy has the strongest relationship. This was affirmed by TVNQC, which reveals a significant time-varying causation impact of MPU and FPU on various renewable energy sources; however, the causality becomes weaker during periods of global economic uncertainty, such as the COVID-19 pandemic and the Russia-Ukraine war. These findings provide a new insight for policymakers for addressing the energy transition and sustainability challenges.

KEYWORDS: MONETARY POLICY, FISCAL POLICY, ENERGY TRANSITION, RENEWABLE ENERGY, QUANTILE.

INTRODUCTION

Energy consumption served a crucial role in the expansion of different types of industries and the fast rise in the world economy ever since the start of the Industrial Revolution.[1] The bulk of this energy usage comes from polluting and non-renewable sources, it consequently caused an unheard-of increase in environmental degradation such as natural disasters, extreme weather events and greenhouse gases emissions,[2] With Carbon dioxide (CO_2) represent the most significant component of greenhouse gases, making up the biggest proportion of their entire amount, where, the primary cause of the high CO_2 emissions is the production and consumption of human's activities.[3] Due to climate change and pollution consequences, the shift to renewable energy sources is rapidly gaining importance, whereas transitioning from one or a group of dominating energy resources to a different type is referred to as an "energy transition". Historical instances include the use of coal instead of wood during the Industrial Revolution and the use of kerosene instead of whale oil in the late 1800s.[4] Meanwhile, the current energy transition is the move toward substituting fossil fuels, which have higher carbon footprints, with cleaner alternatives, notably wind, solar, and biomass energies. Nevertheless, it is uncommon to entirely replace a main source of energy transition by an alternate all at once, instead, this transition typically occurs progressively, beginning with a small percentage and increasing to attain a major portion of the energy consumption's composition.[5]

In recent years, the world began to take significant steps towards energy transition, especially after the Paris Climate Change Agreement, with a massive investment push in the renewable energy generation sector, yet not as fast as anticipated, despite the proven advantages of renewable energy.[6] Besides of relatively low cost of fossil fuels, there are a number of challenges that impede the advancement of renewable energy. As an instance, the high expense of installation, maintenance, and policy uncertainty.[7] In light of policy uncertainty, policymakers may shift their attention away from environmental sustainability toward other pressing challenges, which negatively affect the environmental restrictions. Furthermore, it's reasonable for firms to anticipate laxer environmental regulations in an environment where a high degree of political uncertainty leads to a greater emphasis on economic goals.[8] One of the most significant policy uncertainties that the energy transition may encounter is economic policy uncertainty (EPU), which is defined as the degree of ambiguity around the government policies, especially those pertaining to monetary and fiscal policies, that could significantly affect the business environment.[9] Moreover, many research, proved that EPU have significant impacts on energy gen-

1 Chen, P. Y., Chen, S. T., Hsu, C. S., Chen, C. C. (2016). Modeling the global relationships among economic growth, energy consumption and CO2 emissions. Renewable and Sustainable Energy Reviews, 65, 420-431.

2 Hashmi, S. M., Bhowmik, R., Inglesi-Lotz, R., Syed, Q. R. (2022). Investigating the Environmental Kuznets Curve hypothesis amidst geopolitical risk: Global evidence using bootstrap ARDL approach. Environmental Science and Pollution Research, 29(16), 24049-24062.

3 Kartal, M. T. (2023). Production-based disaggregated analysis of energy consumption and CO2 emission nexus: evidence from the USA by novel dynamic ARDL simulation approach. Environmental Science and Pollution Research, 30(3), 6864-6874.

4 Carley, S., Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. Nature Energy, 5(8), 569-577.

5 Fouquet, R. (2016). Historical energy transitions: Speed, prices and system transformation. Energy research & social science, 22, 7-12.

6 Mohsin, M., Taghizadeh-Hesary, F., Iqbal, N., Saydaliev, H. B. (2022). The role of technological progress and renewable energy deployment in green economic growth. Renewable Energy, 190, 777-787.

7 Lahiani, A., Mefteh-Wali, S., Shahbaz, M., Vo, X. V. (2021). Does financial development influence renewable energy consumption to achieve carbon neutrality in the USA? Energy Policy, 158, 112524.

8 Xue, C., Shahbaz, M., Ahmed, Z., Ahmad, M., Sinha, A. (2022). Clean energy consumption, economic growth, and environmental sustainability: what is the role of economic policy uncertainty? Renewable Energy, 184, 899-907.

9 Adedoyin, F. F., Zakari, A. (2020). Energy consumption, economic expansion, and CO2 emission in the UK: the role of economic policy uncertainty. Science of the Total Environment, 738, 140014.

eration (e.g.; Shafiullah et al.;[10] Yi et al.;[11] Aslan et al.[12]), through price swings and a high reliance on foreign countries, additionally, the renewable energy generation and consumption proportions in a given economy could be influenced by government policies, such as subsidies and direct investment, which aim to improve the macroeconomic climate for energy supply, as both proportions increase due to the increased in energy sector investments. However, EPU has the potential to hinder renewable energy generation through price shocks and fossil fuel shortages.

In contrast to other energy sources, the consumption of renewable energy is directly impacted by governmental policies, particularly monetary policy through its impacts on financial investments. Monetary policy can make it more difficult for investors to get financing and raise the initial cost of investing, as well as the bank lending channel, which rises in response to an increase in the money supply and consequently boosts investments. Given that investing in renewable energy is more expensive and riskier than conventional energy sources, it is extremely susceptible to changes in monetary policies.[13] Fiscal policy, on the other hand, is predicated on altering the level of the country's tax base. Tight fiscal policies have the potential to deter investors, and capital provision would continue to be a barrier by increasing the investors' access to capital costs. However, the renewable energy industry stands to benefit from the lax policies, which present a favorable investment opportunity.[14] Overall, monetary and fiscal policies are both directly and indirectly related to environmental quality, through their significant role in the mitigation of CO_2 emissions and financing the world's energy transition.[15] Furthermore, the renewable energy sector comprises the various categories of the energy sources, in each of which has its properties or behavior to policy measures, where recent studies have highlighted significant heterogeneities within these energy sectors (e.g. Jurasz et al.;[16] Liu et al.;[17] Sinha et al.[18]). Hence, it is important to recognize the heterogeneous nature of renewable energy sources when formulating policies, where understanding how policy uncertainties differentially impact various renewable energy sectors is critical for both policymakers and investors aiming to foster sustainable energy development. Additionally, tailored policy interventions that account for the distinct characteristics of each energy source can enhance the effectiveness of renewable energy policies and promote a more efficient transition to sustainable energy systems.

Despite the growing literature on the nexus between policy uncertainty and renewable energy consumption, most existing studies tend to aggregate overall renewable energy consumption (REC) data, potentially overlooking the distinct dynamics present within individual energy sourc-

10 Shafiullah, M., Miah, M. D., Alam, M. S., Atif, M. (2021). Does economic policy uncertainty affect renewable energy consumption? Renewable Energy, 179, 1500-1521.

11 Yi, S., Raghutla, C., Chittedi, K. R., Fareed, Z. (2023). How economic policy uncertainty and financial development contribute to renewable energy consumption? The importance of economic globalization. Renewable Energy, 202, 1357-1367.

12 Aslan, A., Ilhan, O., Usama, A. M., Savranlar, B., Polat, M. A., Metawa, N., Raboshuk, A. (2024). Effect of economic policy uncertainty on CO2 with the discrimination of renewable and non renewable energy consumption. Energy, 291, 130382.

13 Razmi, S. F., Moghadam, M. H., Behname, M. (2021). Time-varying effects of monetary policy on Iranian renewable energy generation. Renewable Energy, 177, 1161-1169.

14 Chu, L. K., Le, N. T. M. (2022). Environmental quality and the role of economic policy uncertainty, economic complexity, renewable energy, and energy intensity: the case of G7 countries. Environmental Science and Pollution Research, 29(2), 2866-2882.

15 Fu, H., Guo, W., Sun, Z., Xia, T. (2023). Asymmetric impact of natural resources rent, monetary and fiscal policies on environmental sustainability in BRICS countries. Resources Policy, 82, 103444.

16 Jurasz, J., Canales, F. A., Kies, A., Guezgouz, M., Beluco, A. (2020). A review on the complementarity of renewable energy sources: Concept, metrics, application and future research directions. Solar Energy, 195, 703-724.

17 Liu, R., He, L., Liang, X., Yang, X., Xia, Y. (2020). Is there any difference in the impact of economic policy uncertainty on the investment of traditional and renewable energy enterprises? A comparative study based on regulatory effects. Journal of Cleaner Production, 255, 120102.

18 Sinha, A., Murshed, M., Das, N., Saha, T. (2025). Modeling renewable energy market performance under climate policy uncertainty: A novel multivariate quantile causality analysis. Risk Analysis. Available at: <https://doi.org/10.1111/risa.17714>.

es. The research fills an important knowledge gap through separate analysis of renewable energy's main consumption areas, including solar and hydropower and wind power, and biomass. Moreover, the complex interplay between monetary policy uncertainty (MPU) and fiscal policy uncertainty (FPU) and their effects on energy transition indicators has received limited academic attention. Most of the prior research focused on how policy uncertainty affected overall renewable energy consumption (REC), with limited attention to the asymmetric impact on various policies and how they affect energy transition. Hence, the current research looks at the effects of MPU and FPU on different types of renewable energy. The United States was selected for examination in this study, due to it is both the biggest economy and the second-highest carbon emitter in the world. Additionally, it ranks among the top countries in the world for the REC (Syed & Bouri, 2022), as it has come a long way in its energy transition, due to its significant development in the renewable energy sector. Yet, the REC makes around only 11.3% of total energy consumption. Additionally, the study also makes use of the novel multivariate quantile on quantile regression (MQQR) and time-varying nonparametric quantile causality (TVNQC) approaches. With these methodologies, the impact of MPU and FPU on each of the renewable energy segments is examined with a high degree of detail. These approaches offer more robust evidence on the heterogeneity of the impacts of monetary and fiscal uncertainties across the different sectors of energy by considering disaggregate renewable energy data and using quantile regression models, which goes much deeper into the nature of the energy transition, and reveals the unequal exposure and associated different vulnerabilities and resilience of those sectors dependent on solar, hydropower, wind and biomass consumption. Meanwhile, the time-varying analysis allows for the uncovering of the dynamic nature of these causal relationships, which can reveal how the strength and direction of policy impacts can shift significantly over different periods.

Here is the structured overview of this paper: Section 2, summarizes the relevant literature on the subject. Section 3, details the study's methodology and dataset, Section 4 contains the empirical results and associated discussions, and the final section offers some concluding comments and implications for policies.

1. LITERATURE REVIEW

The global energy transition has recently received more attention from researchers considering the urgent need to address climate change and promote sustainable development (e.g. Tian et al.;[19] Elshkaki;[20] Hassan et al.[21]). In the context of the U.S energy transition, the literature researchers have examined this subject from various perspectives over the years. Solomon & Krishna[22] compared the United States with France and Brazil in terms of sustainable energy transition. Unlike the success of France and Brazil in shifting from an oil-based transportation system to more sustainable alternatives, the U.S. was unable to transition from imported oil to a combination of locally produced energy sources. O'Connor & Cleveland[23] studied the U.S. energy transition by analyzing the patterns of the consumption of different energy sources. They reveal that, when traditional energy is taken into account, energy intensity in the United States from 1820 to 2010 shows a downward tendency, as opposed to the inverse U-shaped nexus observed when just commercial energy is taken into account. Stokes & Breetz[24] analyzed the impact of the politics of U.S. state and federal policy on energy transi-

19 Tian, J., Yu, L., Xue, R., Zhuang, S., Shan, Y. (2022). Global low-carbon energy transition in the post-COVID-19 era. Applied energy, 307, 118205.

20 Elshkaki, A. (2023). The implications of material and energy efficiencies for the climate change mitigation potential of global energy transition scenarios. Energy, 267, 126596.

21 Hassan, Q., Viktor, P., Al-Musawi, T. J., Ali, B. M., Algburi, S., Alzoubi, H. M., et al. (2024). The renewable energy role in the global energy Transformations. Renewable Energy Focus, 48, 100545.

22 Solomon, B. D., Krishna, K. (2011). The coming sustainable energy transition: History, strategies, and outlook. Energy policy, 39(11), 7422-7431.

23 O'Connor, P. A., Cleveland, C. J. (2014). US energy transitions 1780–2010. Energies, 7(12), 7955-7993.

24 Stokes, L. C., Breetz, H. L. (2018). Politics in the US energy transition: Case studies of solar, wind, biofuels and electric vehicles policy. Energy Policy, 113, 76-86.

tion, using a variety of renewable energy sectors. The finding shows that Similar trends can be observed in various industries: emerging technology is misappreciated or misinterpreted, high-energy costs present windows of opportunity for legislation, Policies are gradually expanded once they are enacted, and growing political intrigue is a result of established technology's danger to the status quo. The study of Mayer[25] investigated whether community economic identity, elite political affiliation, and ideological cues raise the support for energy transition in multiple U.S. states. Study findings indicate that local policymakers who see fossil fuels as relevant to their area are more likely to back the energy transition, although community economic identities centered around renewable energy sources might not increase endorsement. Surprisingly, elite partisan cues did not affect opinions of the energy transition, while party membership was a strong predictor. Karapin[26] analyzed several eras of renewable energy policymaking at the federal and state levels. A detrimental impact of federalism was found on national policies pertaining to the U.S energy transition, given the way its federalist institutions combine with polarization within the parties and a robust fossil fuel sector domestically. Similarly, Roemer & Haggerty[27] evaluated how state and federal policy in the United States West's rural coal communities facilitate or impede transition planning. It is discovered that Coal areas are shown to be more unpredictable due to the absence of a national energy transition program, leading to the emergence of two separate and divergent policy pathways at the state level. Hammond & Brady[28] analyzed how critical minerals affect the U.S. energy transition using greenhouse gas emissions. They found that the availability of critical minerals will not allow for the green energy transition, and that the price of these commodities will drive up the cost of green energy; moreover, the U.S. government will persist in obstructing any agreement on a clear strategy to promote domestic mineral production. Hincapie-Ossa et al[29] assessed the county-level economic vulnerability to U.S. energy transition, using a machine learning method. The results show that counties with a high concentration of coal mining have a notably lower capacity to handle economic hardship. Using a multivariate quantile on quantile regression, Usman et al[30] examined how residential energy use affects U.S energy transition policies. The findings show that the clean electricity transition across quantiles is positively impacted by household energy-related efficiency.

Despite the existence of literature that covered the effect of EPU on U.S. energy transition (e.g., Nakhli et al.;[31] Ayhan et al.;[32] Husain et al.;[33]). The literature is still limited in terms of monetary and fiscal policies on REC. Sohail et al[34] inves-

25 Mayer, A. (2019). National energy transition, local partisanship? Elite cues, community identity, and support for clean power in the United States. Energy Research & Social Science, 50, 143-150.

26 Karapin, R. (2020). Federalism as a double-edged sword: the slow energy transition in the United States. The Journal of Environment & Development, 29(1), 26-50.

27 Roemer, K. F., Haggerty, J. H. (2021). Coal communities and the US energy transition: A policy corridors assessment. Energy Policy, 151, 112112.

28 Hammond, D. R., Brady, T. F. (2022). Critical minerals for green energy transition: a United States perspective. International Journal of Mining, Reclamation and Environment, 36(9), 624-641.

29 Hincapie-Ossa, D., Frey, N., Gingerich, D. B. (2023). Assessing county-level vulnerability to the energy transition in the United States using machine learning. Energy Research & Social Science, 100, 103099.

30 Usman, O., Iorember, P. T., Ozkan, O., Alola, A. A. (2024). Dampening energy security-related uncertainties in the United States: The role of green energy-technology investment and operation of transnational corporations. Energy, 289, 130006.

31 Nakhli, M. S., Shahbaz, M., Jebli, M. B., Wang, S. (2022). Nexus between economic policy uncertainty, renewable & non-renewable energy and carbon emissions: contextual evidence in carbon neutrality dream of USA. Renewable Energy, 185, 75-85.

32 Ayhan, F., Kartal, M. T., Kılıç Depren, S., Depren, Ö. (2023). Asymmetric effect of economic policy uncertainty, political stability, energy consumption, and economic growth on CO2 emissions: evidence from G-7 countries. Environmental Science and Pollution Research, 30(16), 47422-47437.

33 Husain, S., Sohag, K., Wu, Y. (2024). The responsiveness of renewable energy production to geopolitical risks, oil market instability and economic policy uncertainty: Evidence from United States. Journal of Environmental Management, 350, 119647.

34 Sohail, M. T., Xiuyuan, Y., Usman, A., Majeed, M. T., Ullah, S. (2021). Renewable energy and non-renew-

tigated asymmetry between MPU and both REC and non-REC, using a nonlinear-ARDL model. The findings show that whereas reduced MPU has a considerable positive impact on U.S. REC, yet, MPU's measurement has negligible effects over the short and long terms. While it has short – and long-term negative effects on non-REC, when there is increasing U.S. monetary policy uncertainty. Jamil et al[35] used the ARDL approach to analyze the effect of MPU, FPU, and trade policy uncertainty on the U.S. energy transition. They found that whereas FPU increases the generation of renewable energy, MPU decreases it both in the short and long terms. Furthermore, the production of renewable energy is unaffected by trade policy uncertainties. Hashmi et al[36] studied the relationships between U.S monetary policy and REC. The results show that expansionary monetary policy encourages REC in both the long – and short-term and vice versa. Additionally, monetary policy has a rather large impact in the short term. By applying the STIRPAT approach, Sun et al.[37] examined how monetary and fiscal policy affected the G7 nations' REC. The empirical findings indicate that the increased fiscal policy contributes significantly to REC. Where Bildirici et al[38] analyzed the U.S. monetary and fiscal policy causal impact on CO2 emissions as an indicator of U.S. energy transition using a nonlinear bootstrapping ARDL to generalize the nonlinear bootstrapping Granger causality test. The results reveal that monetary and fiscal policy exhibit an asymmetrical impact in both the short and long run. While the contractionary or expansionary effects of fiscal measures raise CO2 emissions, the expansion of monetary policies drives down CO2 emissions.

In general, the prior research regarding the effects of MPU and FPU on REC that we highlight in this paper has provided mixed findings, where REC has often been considered a single variety. Meanwhile, looking at the evolution of renewables specifically, the market for renewable energy sources is quite diverse, which means that the market for one source may react differently to changes in policy compared to another source. On the other hand, while some studies have begun to address these issues, there is a clear need for further research employing advanced econometric techniques such as multivariate quantile on quantile regression and time-varying nonparametric quantile causality, that can capture both the asymmetric and dynamic nature of policies impacts across various quantiles of different sources of REC. Addressing this gap would provide a more granular understanding of how distinct facets of policy uncertainty shape the energy transition practically in the U.S., ultimately offering more precise insights for policymakers and investors.

2. METHODOLOGY

2.1. Data

The research dataset contains different renewable energy consumption of the four main sources, obtained from U.S. Energy Information Administration, namely, solar (SLR), hydropower (HDR), wind (WND), and biomass (BIO), all measured in Trillion BTU. In addition to the Monetary Policy Uncertainty index (MPU) and Fiscal Policy Uncertainty index (FPU), collected from Federal Reserve Economic Data. Monthly data was used for all variables within the U.S., in the period from January 2000 to November 2023, with 287 Observations, as displayed in Table 1.

able energy consumption: assessing the asymmetric role of monetary policy uncertainty in energy consumption. Environmental Science and Pollution Research, 28, 31575-31584.

35 Jamil, M., Ahmed, F., Debnath, G. C., Bojnec, Š. (2022). Transition to renewable energy production in the United States: The role of monetary, fiscal, and trade policy uncertainty. Energies, 15(13), 4527.

36 Hashmi, S. M., Syed, Q. R., Inglesi-Lotz, R. (2022). Monetary and energy policy interlinkages: The case of renewable energy in the US. Renewable Energy, 201, 141-147.

37 Sun, C., Khan, A., Liu, Y., Lei, N. (2022). An analysis of the impact of fiscal and monetary policy fluctuations on the disaggregated level renewable energy generation in the G7 countries. Renewable Energy, 189, 1154-1165.

38 Bildirici, M., Çırpıcı, Y. A., Ersin, Ö. Ö. (2023). Effects of Technology, Energy, Monetary, and Fiscal Policies on the Relationship between Renewable and Fossil Fuel Energies and Environmental Pollution: Novel NBARDL and Causality Analyses. Sustainability, 15(20), 14887.

TABLE 1: DESCRIPTIVE STATISTICS

DIMENSIONS	SLR	HDR	WND	BIO	MPU	FPU
MEAN	5.468647	76.40581	15.64287	298.5753	95.56030	115.7532
MEDIAN	5.259000	74.36400	8.433000	282.4580	80.11704	94.10752
MAX	12.33600	111.1870	59.62900	422.7210	407.9409	374.3071
MIN	2.742000	50.30200	1.126000	199.3700	17.61623	23.05206
STD. DEV	1.952529	13.95430	15.37902	63.42794	59.74956	75.91071
SKEWNESS	1.372412	0.305525	1.018587	0.353982	1.979924	1.245514
KURTOSIS	5.178907	2.429005	2.861114	1.735928	8.778054	4.120823
SUM	913.2640	12759.77	2612.359	49862.07	15958.57	19330.78
JB	85.46011*	12.15166 *	29.01183*	14.60617*	341.4197*	51.91936*

*Note: * stands for P<0.01.*

Source: Author's research in R-studio.

2.2. Empirical methods

2.2.1. MQOQ method

The study analyzed the asymmetric effect of MPU and FPU on REC as a proxy for energy transition by applying the MQQR approach, which was employed in many recent studies about renewable energy (e.g., Sinha et al;[39] Abbas et al;[40] Usman et al.[41]). This approach is considered an extension of Sim & Zhou's[42] quantile on quantile regression (QQR), which functions in a bivariate frame and provides a combination of nonparametric estimation and quantile regression. Nevertheless, there's a possibility that this approach will suffer from omitted series bias. Meanwhile, MQOQ approach enables to examination of the standalone impact of each variable after controlling for confounding factors, by evaluating the dependent and independent variables' quantiles.

With Y as the dependent variable and X_1, X_2 ... X_n as the independent variables, the MQQR model for the Y and X relationship across different quantiles (0,05-0,95) can be described as follows:

$$Y_t = \alpha_0(\delta, \tau_1, \tau_2 \dots \tau_n) + \alpha_1(\delta, \tau_1)(X_{1t} - X_1^{\tau_1}) +$$

$$+ \alpha_2(\delta, \tau_2)(X_{2t} - X_2^{\tau_2}) + \cdots + \alpha_2(\delta, \tau_n)(X_{nt} - X_n^{\tau_n}) + \epsilon^{\delta}$$

Where: represent the quantiles of X_1, X_2 ... X_n respectively, indicates the quantile of Y, and is the error with a zero –quantile. Since the QQR method relies on the bandwidth size being appropriately picked, we will next set it to 0.05 for our MQQR models.

2.2.2. TVNQC method

Following Adebayo,[43] this study uses the time-varying nonparametric quantile causality (TVNQC) method presented by Olasehinde-Williams et al. (2023), which uses the time-varying nonparametric quantile causality (NQC) approach of Balcilar et al. (2016) in rolling sub-sample win-

39 Sinha, A., Ghosh, V., Hussain, N., Nguyen, D. K., Das, N. (2023). Green financing of renewable energy generation: Capturing the role of exogenous moderation for ensuring sustainable development. Energy Economics, 126, 107021.

40 Abbas, S., Saha, T., Sinha, A. (2024). Price response of top-five renewable energy firms to Russia-Ukraine conflict: An advanced quantile analysis to achieve net-zero in United States of America. Journal of Cleaner Production, 141153.

41 Usman, O., Iorember, P. T., Ozkan, O., Alola, A. A. (2024). Dampening energy security-related uncertainties in the United States: The role of green energy-technology investment and operation of transnational corporations. Energy, 289, 130006.

42 Sim, N., Zhou, H. (2015). Oil prices, US stock return, and the dependence between their quantiles. Journal of Banking & Finance, 55, 1-8.

43 Adebayo, T. S. (2024). Do uncertainties moderate the influence of renewable energy consumption on electric power CO2 emissions? A new policy insight. International Journal of Sustainable Development & World Ecology, 31(3), 314-329.

TABLE 2: UNIT ROOT TESTS

	ADF		PP	
	L	FD	L	FD
SLR	-2.580065	-2.580065	-4.014288**	-4.014635*
HDR	-3.473096	-3.473096*	-3.469933*	-3.470179*
WND	-4.018349	-4.018349*	-4.014288**	-4.014635*
BIO	-4.018748*	-2.580065**	-4.014288*	-4.014635**
MPU	-3.469933*	-3.470179*	-3.469933*	-3.470179*
FPU	-4.014288*	-4.014986*	-4.014288*	-4.014635*

*Note: L, FD, * and ** stand for level, first difference, P<0.01, and P<0.05, respectively.*
Source: Author's research in R-studio

dows to analyze the study's dependent and independent variables' dynamic causal relationship. This method offers a more comprehensive view of the causal quantile effect among the study variables and exhibits greater robustness against errors of misspecification (Mouffok & Mouffok[44]).

3. RESULTS AND DISCUSSION

3.1. Unit root and nonlinear tests

Firstly, we ascertain the variables' levels of stationarity using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) as two distinct unit root tests in order to obtaining accurate results. According to the findings of the tests listed in Table 2, the null hypothesis can be rejected in the level series at the 1% level of significance, except for SLR and WND, where their stationarity can be confirmed at the 5% level of significance (see Table 2).

Brock et al.[45] BDS test is employed to assess nonlinearity of the study variables. Based on the results of Table 3, the null hypothesis of linearity for all the variables is rejected, as such, there is a nonlinear tendency in SLR, HDR, WND, BIO, MPU and FPU (see Table 3).

3.2. MQQR results

Figure 1 presents the slope coefficient estimates of the impact of the τ^{th} quantile of MPU in the presence of FPU and of FPU in the presence of MPU on the quantile of SLR at various values of δ and τ. According to Figure 2 (a), MPU has a positive

44 Mouffok, M. A., Mouffok, O. (2025). Wavelet-quantile analysis of the nexus between economic policy uncertainty and sustainable markets: An ESG context. Journal of Cleaner Production, 145574.

45 Broock, W. A., Scheinkman, J. A., Dechert, W. D., LeBaron, B. (1996). A test for independence based on the correlation dimension. Econometric reviews, 15(3), 197-23.

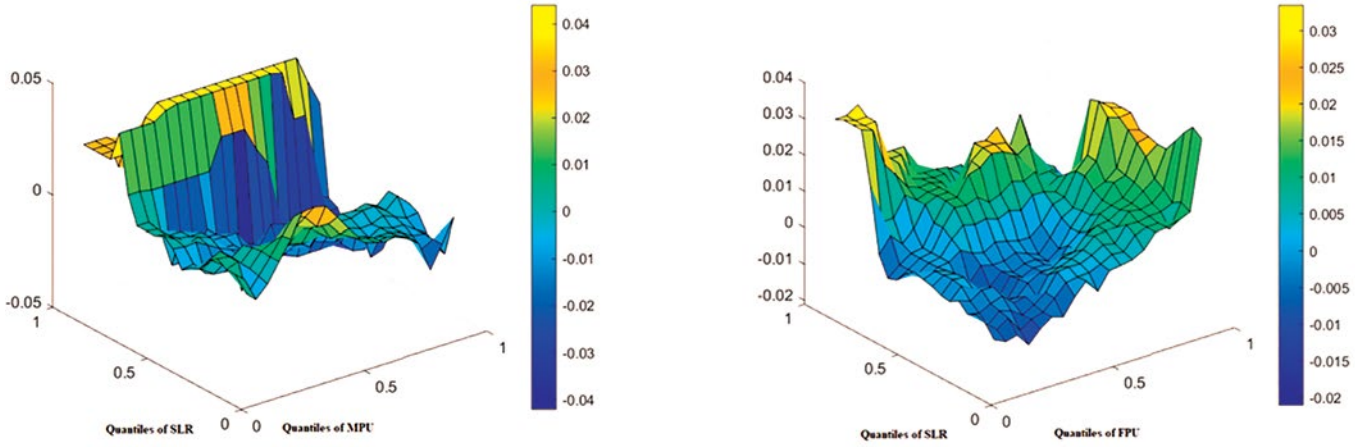
TABLE 3: BDS TESTS

DIMENSIONS	SLR	HDR	WND	BIO	MPU	FPU
M2	2.6063*	-2.9798*	-3.0872*	-2.3952*	-2.8372*	-2.0332**
M3	2.7115*	-3.5984*	-2.5880*	-2.3765*	-2.9108*	-2.2173*
M4	2.9399*	-3.6102*	-2.6523*	-2.7920*	-3.0597*	-2.4400*
M5	3.5918*	-3.2922*	-2.7895*	-2.5293*	-3.2438*	-3.0925*
M6	3.4648*	-3.0245*	-4.3491*	-2.7778*	-3.4058*	-3.1268*

*Note: * stands for P<0.01.*
Source: Author's research in R-studio

FIGURE 1: MQQR PLOTS OF THE IMPACT OF MPU AND FPU ON SLR

(a) SLR = *f* (MPU, FPU) **(b) SLR= *f* (FPU, MPU)**



Source: Author's research in MATLAB

impact on SLR at the low quantiles of MPU (0.23 to 0.43) and the high quantiles of SLR (0.66 to 0.90). This finding suggests that when the level of MPU is relatively low, any increase in uncertainty may actually coincide with or even promote higher levels of solar energy consumption, perhaps reflecting a scenario where low uncertainty encourages investment in renewable energy projects at times when the solar sector is already performing strongly. Conversely, when the analysis shifts to the higher MPU, it has a negative impact on SLR at the high quantiles of MPU (0.80 to 0.90) and the medium and high quantiles of SLR (0.66 to 0.90). This inversion could indicate that when monetary policy uncertainty is elevated, it dampens solar energy investments or adoption, especially in segments of the market that are otherwise robust, possibly due to risk aversion or tighter credit conditions affecting capital-intensive renewable projects. In addition. Figure 2 (b) shows that at the low and medium quantiles of FPU (0.05 to 0.50), the impact of FPU on SLR is negative at low and medium quantiles of SLR (0.05 to 0.52) and positive at the high quantiles of SLR (0.57 to 0.90). This pattern might suggest that, under relatively stable fiscal conditions, increases in uncertainty can have a dual character, suppressing solar energy consumption when the sector is underperforming but stimulating it when the sector is already in a high-consumption phase, potentially due to strategic adjustments by market participants who perceive uncertainty as a signal to capitalize on favorable conditions. While at the high quantiles of FPU (0.71 to 0.90), the impact of FPU on SLR is positive at the low and medium quantiles of SLR (0.05 to 0.61) and negative at the high quantiles of SLR (0.76 to 0.90). This reversal could imply that under conditions of high fiscal uncertainty, lower-performing segments of the solar energy market might experience a boost, possibly due to government interventions or reallocation of resources—while the sectors already enjoying high levels of solar consumption become adversely affected, perhaps due to market saturation or increased competition for limited fiscal support. The findings confirm the previous studies (e.g., Sohail et al.;[46] Khan & Su;[47] Liu et al.[48]).

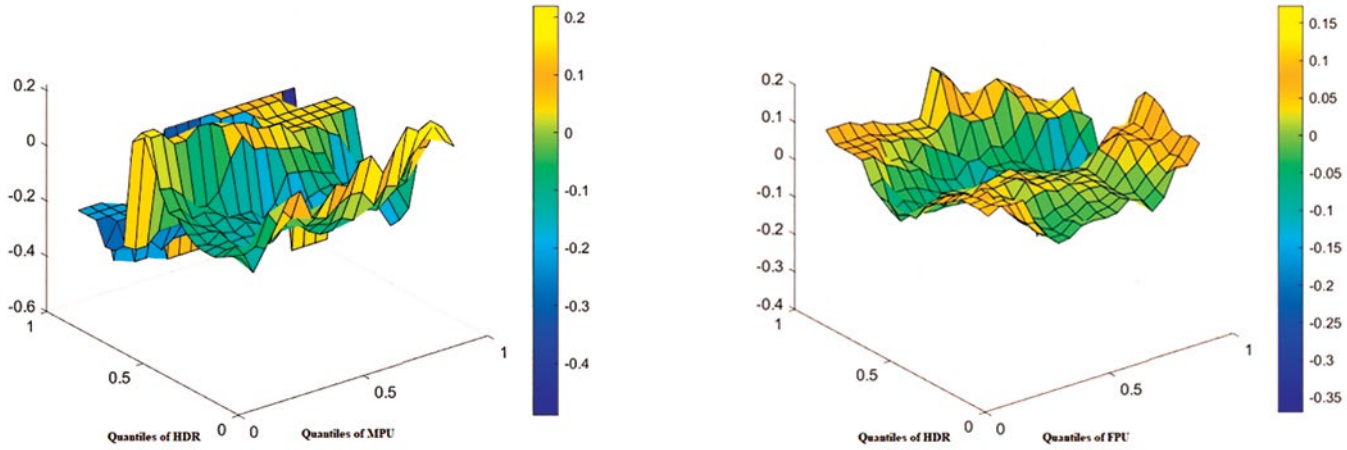
46 Sohail, M. T., Xiuyuan, Y., Usman, A., Majeed, M. T., Ullah, S. (2021). Renewable energy and non-renewable energy consumption: assessing the asymmetric role of monetary policy uncertainty in energy consumption. Environmental Science and Pollution Research, 28, 31575-31584.

47 Khan, K., Su, C. W. (2022). Does policy uncertainty threaten renewable energy? Evidence from G7 countries. Environmental Science and Pollution Research, 29(23), 34813-34829.

48 Liu, K., Luo, J., Faridi, M. Z., Nazar, R., Ali, S. (2025). Green shoots in uncertain times: Decoding the asymmetric nexus between monetary policy un-

FIGURE 2: MQQR PLOTS OF THE IMPACT OF MPU AND FPU ON HDR

(a) HDR= *f* (MPU, FPU) **(b) HDR= *f* (FPU, MPU)**



Source: Author's research in MATLAB

Figure 2 shows the slope coefficient estimates of the impact of the τ^{th} quantile of MPU in the presence of FPU and of FPU in the presence of MPU on the quantile of HDR at various values of δ and τ. From Figure 3 (a), we note that the HDR was positively impacted by MPU at all quantile levels of MPU (0.19 to 0.90) and the medium quantiles of HDR (0.47 to 0.71). This suggests that during periods of medium hydropower consumption, increases in MPU are associated with enhanced HDR activity. One interpretation of this finding is that, under moderate levels of hydropower usage, monetary uncertainty might encourage a reallocation of capital towards renewable energy investments, thereby bolstering hydropower initiatives. Also, it was negatively impacted by MPU at the low and high quantiles of HDR (0.14 to 0.42; 0.76 to 0.90). This could be indicative of scenarios where either a low base level of hydropower consumption or an already saturated market becomes more vulnerable to the destabilizing effects of monetary uncertainty. In low-consumption settings, even modest uncertainty might deter further investment, while in high-consumption scenarios, the added uncertainty might constrain additional expansion by heightening risk perceptions among investors. In Figure 3 (b), MPU has a positive impact on HDR at the low and high quantiles of MPU (0.05 to 0.33, 0.61 to 0.90) and the low and high quantiles of HDR (0.05 to 0.42, 0.76 to 0.90). This positive relationship may imply that in conditions of relatively low or very high fiscal uncertainty, perhaps hydropower consumption benefits through targeted policy measures or compensatory investments that offset uncertainty. Meanwhile, it has a negative impact on HDR at the medium quantiles of MPU (0.38 to 0.71) and SLR (0.47 to 0.71). This negative impact at moderate levels might signal that during periods of middling fiscal uncertainty, the market experiences conflicting signals that lead to hesitancy or misallocation of resources, thereby stifling hydropower development. These results are consistent with prior studies (e.g., Xue et al.;[49] Yi et al.;[50] Dai et al. 2025[51]).

certainty and renewable energy. Energy & Environment.

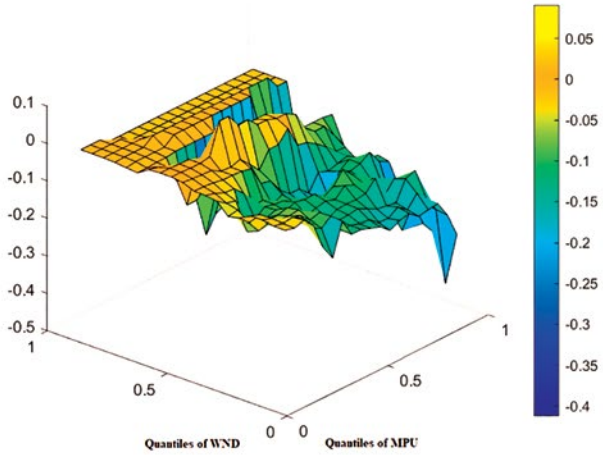
49 Xue, C., Shahbaz, M., Ahmed, Z., Ahmad, M., Sinha, A. (2022). Clean energy consumption, economic growth, and environmental sustainability: what is the role of economic policy uncertainty? Renewable Energy, 184, 899-907.

50 Yi, S., Raghutla, C., Chittedi, K. R., Fareed, Z. (2023). How economic policy uncertainty and financial development contribute to renewable energy consumption? The importance of economic globalization. Renewable Energy, 202, 1357-1367.

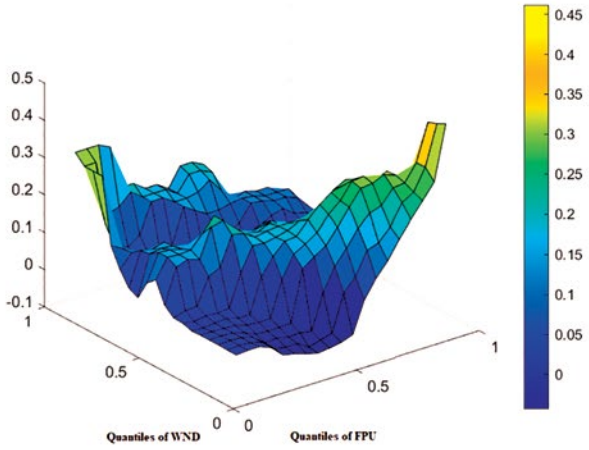
51 Dai, J., Farooq, U., Alam, M. M. (2025). Navigating energy policy uncertainty: Effects on fossil fuel and renewable energy consumption in G7 economies. International Journal of Green Energy, 22(2), 239-252.

FIGURE 3: MQQR PLOTS OF THE IMPACT OF MPU AND FPU ON WND

(a) WND= *f* (MPU, FPU)



(b) WND= *f* (FPU, MPU)



Source: Author's research in MATLAB

Figure 3 presents the slope coefficient estimates of the impact of the τ^{th} quantile of MPU in the presence of FPU and of FPU in the presence of MPU on the quantile of WND at various values of δ and τ. Figure 4 (a) shows that at the medium quantiles of WND (0.51 to 0.57), the impact of MPU on WND is positive. This suggests that under moderate levels of WND, an increase in MPU might spur investment or operational activity in wind energy. This could be interpreted as market participants perceiving moderate uncertainty as a precursor to potential corrective actions or policy adjustments that might benefit the wind energy sector. Yet, the impact becomes negative at the low quantiles of WND (0.05 to 0.41) and at the medium and high quantiles of MPU (0.47 to 0.90), indicating that when wind energy consumption is already at a subdued level or medium to high level of MPU, any increase in monetary uncertainty may exacerbate investor hesitancy or reduce the flow of capital necessary for growth in the sector. Meanwhile, the impact of FPU on WND at the all-quantiles levels of FPU and WND is positive, with the highest and most significant impact at the high quantiles of FPU (0.80 to 0.90) and the low quantiles of WND (0.05 to 0.19), as shown in Figure 4 (b). the consistently positive impact across all quantiles suggests that fiscal policy uncertainty may catalyze enhancing wind energy consumption, potentially by fostering a reallocation of resources towards more sustainable and economically viable energy alternatives in times of fiscal unpredictability, which minimize the shifting to non-renewable alternatives and support the investment in wind energy than other renewable sources (Johnston & Yang;[52] Chen[53]).

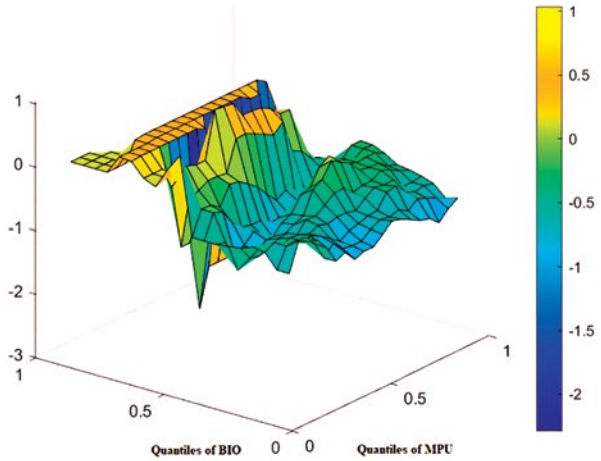
Figure 4 demonstrates the slope coefficient estimates of the impact of the τ^{th} quantile of MPU in the presence of FPU and of FPU in the presence of MPU on the quantile of BIO at various values of δ and τ. Figure 5 (a) outcomes show that MPU has a negative impact on BIO at the all quantiles levels of MPU (0.05 to 0.90) and the low and high quantiles of BIO (0.05 to 0.47; 0.61 to 0.71) This suggests that when biomass consumption is either relatively low or within a specific high range, increased monetary uncertainty tends to depress investment or operational activities in the biomass sector. It is conceivable that in these segments, heightened MPU exacerbates risk aversion among investors or signals tighter credit conditions, thus leading to reduced capital flows into biomass projects. While the relationship reverses

52 Johnston, S., Yang, C. (2019). Policy uncertainty and investment in wind energy. Working Paper.

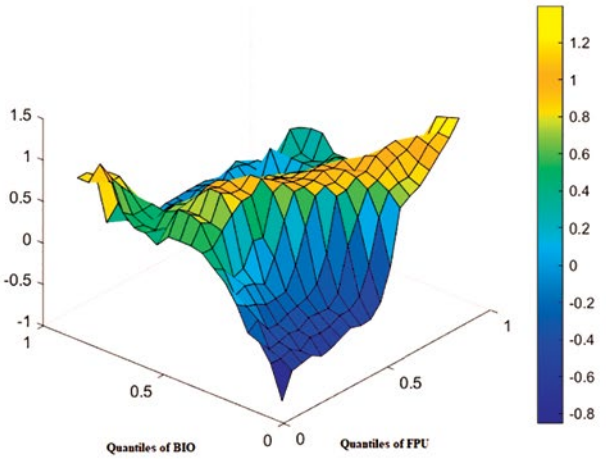
53 Chen, L. (2024). The Dynamic Efficiency of Policy Uncertainty: Evidence from the Wind Industry. Working Paper.

FIGURE 4: MQQR PLOTS OF THE IMPACT OF MPU AND FPU ON BIO

(a) BIO= *f* (MPU, FPU)



(b) BIO= *f* (FPU, MPU)



Source: Author's research in MATLAB

at the medium and high quantiles of BIO (0.66 to 0.71, 0.76 to 0.90). This implies that when the biomass consumption is high, increased monetary uncertainty might spur a reallocation of resources or foster a competitive environment that benefits the biomass sector. This positive effect could be interpreted as market participants perceiving uncertainty as an opportunity to shift investments towards biomass, possibly due to its relative resilience or because of supportive measures that come into play during periods of heightened monetary instability. Figure 5 (b) affirms that at the low quantiles of FPU (0.05 to 0.41), suggesting that even in relatively stable fiscal environments, the increases in FPU can have a dampening effect on biomass consumption when the sector is already underperforming. The impact of FPU on BIO is positive at medium and high quantiles of BIO (0.42 to 0.90) and it's negative at the low quantiles of BIO (0.05 to 0.42). This hints that when biomass consumption is more robust, the increases in fiscal uncertainty may be associated with proactive adjustments, while in more uncertain fiscal settings, even the lower-performing BIO might benefit from targeted fiscal interventions or a rebalancing of resource allocation. For the low medium and high quantiles of FPU (0.41 to 0.90), the impact of FPU on BIO is positive at low quantiles of BIO (0.05 to 0.42) and it's negative at the medium and high quantiles of BIO (0.42 to 0.90), which implies that for the periods that already exhibiting higher levels of biomass consumption, increased fiscal uncertainty may hinder further growth, possibly due to market saturation or the adverse effects of broader economic instability. These outcomes are in line with past studies (e.g., Zhang & Razzaq;[54] Qamruzzaman et al.[55]).

Overall, the MPU and FPU have an asymmetric relationship with different U.S REC sources at the majority of combinations of quantiles. In particular, MPU exerts the most pronounced and multifaceted influence on the U.S. energy transition, where MPU tends to have substantial positive or negative impacts on REC depending on the prevailing market conditions. Meanwhile, FPU also affects these energy sources, yet its effects are generally less dramatic than those of MPU. Moreover, biomass energy consistently shows the strongest relationship with both MPU and FPU.

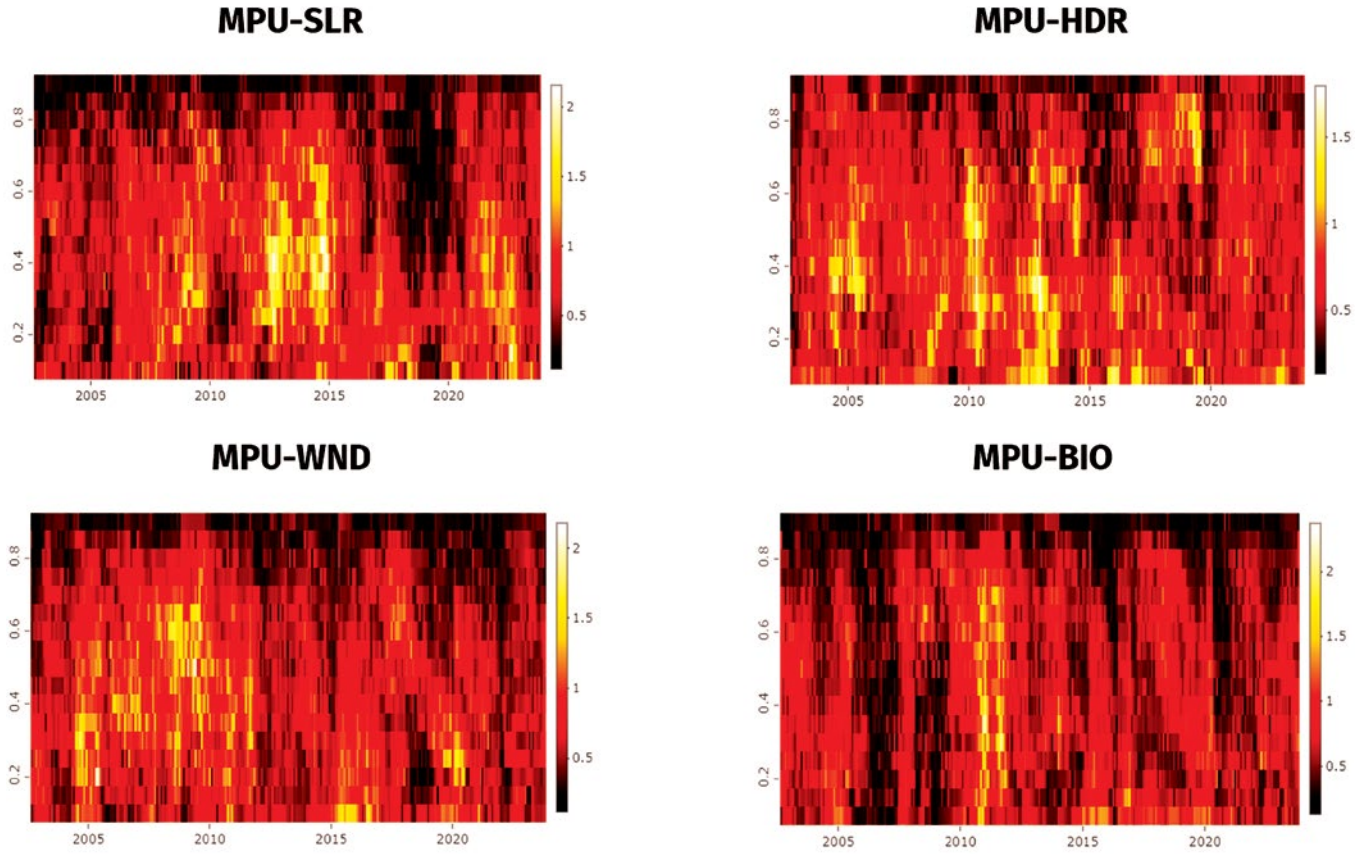
54 Zhang, R. J., Razzaq, A. (2022). Influence of economic policy uncertainty and financial development on renewable energy consumption in the BRICST region. Renewable Energy, 201, 526-533.

55 Qamruzzaman, M., Karim, S., Jahan, I. (2022). Nexus between economic policy uncertainty, foreign direct investment, government debt and renewable energy consumption in 13 top oil importing nations: Evidence from the symmetric and asymmetric investigation. Renewable Energy, 195, 121-136.

3.3. TVNQC results

The study applies the time-varying nonparametric quantile causality (TVNQC) to determine the causal influence of MPU and FPU on SLR, HDR, WND, and BIO in the US, using a rolling window size of 3 years. Figure 5 presents the time-varying causal impact of MPU on SLR, HDR, WND, and BIO. We note that the time-varying causality between MPU and renewable energies consumption is concentrated at the all-quantiles levels (0.10 to 0.90). This wide distribution indicates that the effect of MPU permeates nearly all levels of renewable energy consumption, reflecting the pervasive nature of monetary uncertainty across different market conditions. Notably, the causality exhibits significant temporal variation, with marked intensification during the 2005-2009 and 2011-2015 periods. These intervals likely coincide with episodes of heightened macroeconomic turbulence, such as the global financial crisis and subsequent recovery phases, when fluctuations in monetary policy were more pronounced and, as a result, had a stronger spillover effect on investment decisions and operational activities within the renewable energy sector. Conversely, the period from 2020 to 2023 shows a weakened causal relationship, suggesting that recent developments, including shifts in the global economic environment, changes in policy frameworks, or evolving market conditions, have mitigated the influence of monetary policy uncertainty on renewable energy investments. Furthermore, SLR emerges as the most sensitive to MPU fluctuations, displaying the highest level of causality. This pronounced sensitivity could be attributed to the capital-intensive nature of solar projects and the sector's reliance on rapidly evolving technological and financial conditions, which make it more reactive to shifts in monetary policy. On the other hand, HDR shows the lowest causality with MPU, suggesting a relative insensitivity that might stem from the mature, long-term

FIGURE 5: TVNQC PLOTS OF CAUSAL IMPACT OF MPU ON SLR, HDR, WND, AND BIO.



Source: Author's research in R-studio

infrastructure characteristic of hydropower projects, which are typically less vulnerable to short-term monetary fluctuations. This confirms the prior research (e.g., Lu et al.;[56] Li et al.;[57] Wang et al.[58]) (see Figure 5).

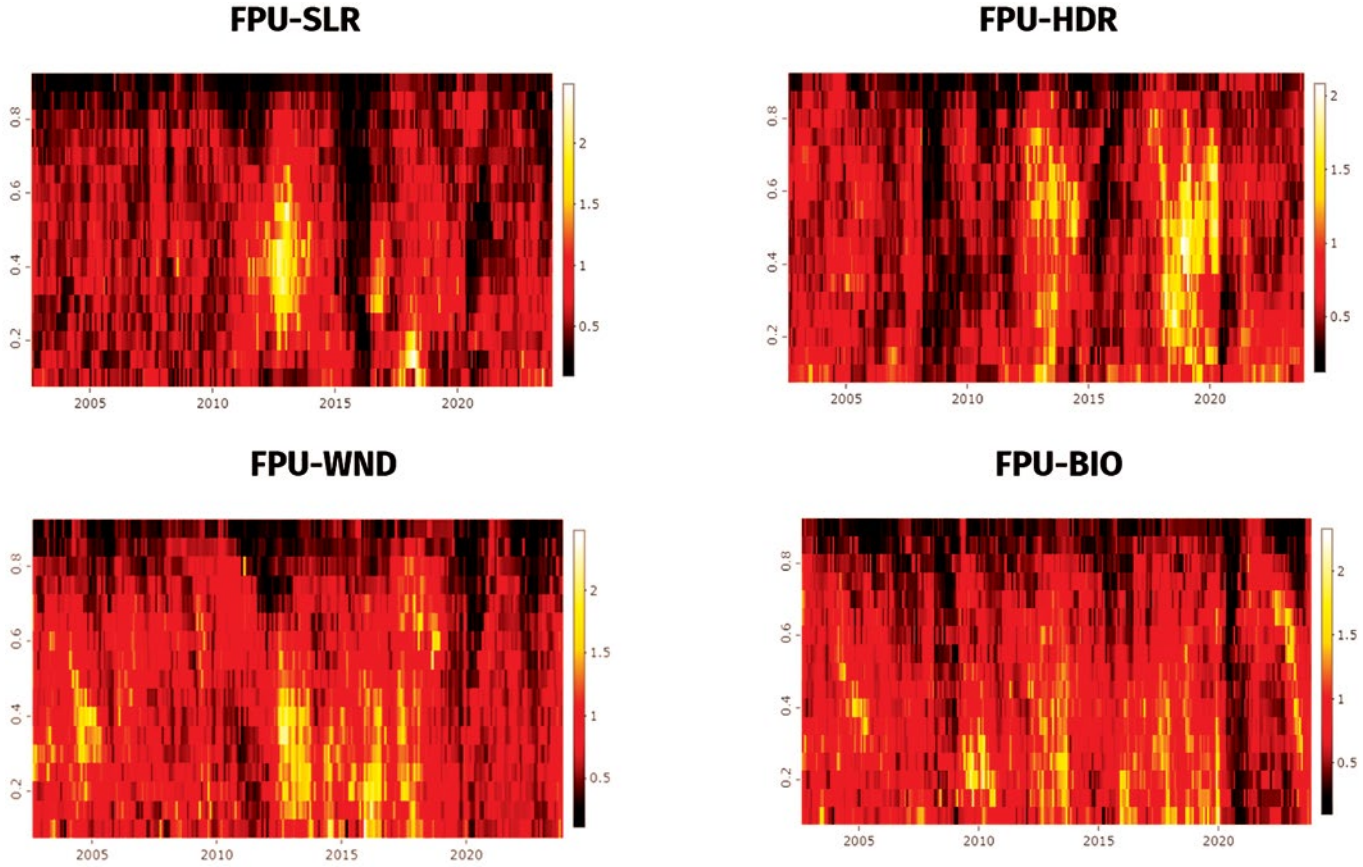
Figure 6 shows the time-varying causal impact of FPU on SLR, HDR, WND, and BIO. The results display that the time-varying causality between FPU and renewable energies consumption is appearing at the low, medium, and high quantiles (0.15 to 0.80). This broad range implies that fiscal policy uncertainty does not solely affect extremely low or high consumption levels; rather, its impact is distributed across the entire consumption spectrum. However, the causality is not static over time. Instead, it exhibits clear temporal fluctuations, with pronounced periods of stronger causality during 2011–2015 and again in 2017–2019. These intervals may correspond to periods when fiscal policy was undergoing significant shifts or when macroeconomic conditions heightened fiscal risks, thereby exerting more substantial influence on investment decisions and consumption patterns within the renewable energy sectors. Meanwhile, the period from 2020 to 2023 is characterized by a relatively weaker causal linkage, possibly reflecting the sensitivity of the causal nexus between FPU and REC to the changes in policy responses, market destabilization, global economic crisis, and rising geopolitical risks. Among the four energy types, BIO exhibits the strongest causal relationship with FPU, suggesting that fluctuations in fiscal un-

56 Lu, Z., Zhu, L., Lau, C. K. M., Isah, A. B., Zhu, X. (2021). The role of economic policy uncertainty in renewable energy-growth nexus: evidence from the Rossi-Wang causality test. Frontiers in Energy Research, 9, 750652.

57 Li, Z. Z., Su, C. W., Moldovan, N. C., Umar, M. (2023). Energy consumption within policy uncertainty: Considering the climate and economic factors. Renewable Energy, 208, 567-576.

58 Wang, K. H., Wen, C. P., Liu, H. W., Liu, L. (2023). Promotion or hindrance? Exploring the bidirectional causality between geopolitical risk and green bonds from an energy perspective. Resources Policy, 85, 103966.

FIGURE 6: TVNQC PLOTS OF THE IMPACT OF FPU ON SLR, HDR, WND, AND BIO.



Source: Author's research in R-studio

certainty are most keenly felt in the biomass sector. This heightened sensitivity may be due to the capital-intensive and policy-dependent nature of biomass investments, where fiscal signals play a critical role in driving financing decisions and operational adjustments. In contrast, SLR shows the weakest causal connection with FPU, indicating that the solar sector might be less vulnerable to fiscal uncertainty, potentially due to more diversified financing structures, technological advancements, or stronger policy support that cushions against fiscal fluctuations. These findings coincide with past studies research (e.g., Su et al.;[59] Wang et al.;[60] Zhao et al.[61])

CONCLUSION

The present research delves into the asymmetric impact of monetary and fiscal policy uncertainty on energy transition in the United States, using U.S renewable energy consumption from solar, hydropower, wind and biomass as proxy US energy transition, with monthly data spanning from January 2000 to November 2023, by applying the multivariate quantile on quantile approach (MQOQ) and time-varying nonparametric quantile causality (TVNQC) approaches. The MQOQ results show that U.S. monetary and fiscal policy uncertainty indexes have a significant asymmetric impact on different renewable energy consumption, where the monetary policy uncertainty index has the bigger impact, while renewable energy consumption from biomass has the strongest relationship with monetary and fiscal policy uncertainty indexes than the author's sources. The TVNQC outcomes reveals a strong time-varying causality of U.S. monetary and fiscal policy uncertainty indexes with all renewable energies consumption sources, except for the period of covid-19 and Russia-Ukraine war (2020-2023), whereas biomass source shows a stronger causality with US monetary and fiscal policy uncertainty indexes respectively than the author renewable energies sources.

The implications of this result are crucial for policymakers and investors involved in shaping transformation plans in the U.S. energy sector. First, policymakers should design tailored incentives for each sector. For example, targeted subsidies or tax credits could be implemented for solar projects during periods of high monetary uncertainty, while biomass sectors might benefit more from direct fiscal support, as well as adopting frameworks that can adjust monetary and fiscal measures in real time based on market conditions. Additionally, the dynamic causal nexus between policy uncertainty and renewable energy consumption can help authorities design policies that are more resilient during economic stress and capitalize on periods of stability. Moreover, by tailoring interventions to both the sector and the prevailing economic conditions, policymakers can better support long-term investments in renewable energy. Second, investors should diversify their investments across different renewable energy sectors can help to mitigate risks associated with policy fluctuations, also adjust their strategies in anticipation of future turbulent periods by increasing hedging measures or reallocating assets to more resilient sectors. Furthermore, by implementing flexible and dynamic strategies, investors can take advantage of both uncertain and certain periods to invest in renewable energy and capitalize on the entire energy transition.

Even though the current study advances the understanding of how monetary and fiscal policy uncertainty affects the US energy transition, some limitations need to be acknowledged. For example, the analysis is focused mainly on the United States and a specific set of renewable energy sources. Future research could extend the analysis by generalizing the findings a cross-country framework or using sector-specific renewable energy consumption. Additionally, although the MQOQ and TVNQC approaches are powerful in uncovering nonlinear and asymmetric effects, they are limited in terms of dynamic impact analysis. Researchers can employ alternative methods,

59 Su, C. W., Khan, K., Umar, M., Zhang, W. (2021). Does renewable energy redefine geopolitical risks?. Energy Policy, 158, 112566.

60 Wang, X., Li, J., Ren, X. (2022). Asymmetric causality of economic policy uncertainty and oil volatility index on time-varying nexus of the clean energy, carbon and green bond. International Review of Financial Analysis, 83, 102306.

61 Zhao, Z., Gozgor, G., Lau, M. C. K., Mahalik, M. K., Patel, G., Khalfaoui, R. (2023). The impact of geopolitical risks on renewable energy demand in OECD countries. Energy Economics, 122, 106700.

such as wavelet analysis or other dynamic quantile approaches. Lastly, the study does not account for other macroeconomic factors (e.g., technological innovations, global energy prices, international policy spillovers), which can be done by future studies to add more clarification to the impact of monetary and fiscal policy uncertainty on the U.S energy transition.

BIBLIOGRAPHY:

1. Abbas, S., Saha, T., Sinha, A. (2024). Price response of top-five renewable energy firms to Russia-Ukraine conflict: An advanced quantile analysis to achieve net-zero in United States of America. Journal of Cleaner Production;
2. Adebayo, T. S. (2024). Do uncertainties moderate the influence of renewable energy consumption on electric power CO2 emissions? A new policy insight. International Journal of Sustainable Development & World Ecology, 31(3);
3. Adedoyin, F. F., Zakari, A. (2020). Energy consumption, economic expansion, and CO2 emission in the UK: the role of economic policy uncertainty. Science of the Total Environment, 738;
4. Aslan, A., Ilhan, O., Usama, A. M., Savranlar, B., Polat, M. A., Metawa, N., Raboshuk, A. (2024). Effect of economic policy uncertainty on CO2 with the discrimination of renewable and non renewable energy consumption. Energy, 291;
5. Ayhan, F., Kartal, M. T., Kılıç Depren, S., Depren, Ö. (2023). Asymmetric effect of economic policy uncertainty, political stability, energy consumption, and economic growth on CO2 emissions: evidence from G-7 countries. Environmental Science and Pollution Research, 30(16);
6. Bildirici, M., Çırpıcı, Y. A., & Ersin, Ö. Ö. (2023). Effects of Technology, Energy, Monetary, and Fiscal Policies on the Relationship between Renewable and Fossil Fuel Energies and Environmental Pollution: Novel NBARDL and Causality Analyses. Sustainability, 15(20);
7. Broock, W. A., Scheinkman, J. A., Dechert, W. D., LeBaron, B. (1996). A test for independence based on the correlation dimension. Econometric reviews, 15(3);
8. Carley, S., Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. Nature Energy, 5(8);
9. Chen, L. (2024). The Dynamic Efficiency of Policy Uncertainty: Evidence from the Wind Industry. Working Paper;
10. Chen, P. Y., Chen, S. T., Hsu, C. S., Chen, C. C. (2016). Modeling the global relationships among economic growth, energy consumption and CO2 emissions. Renewable and Sustainable Energy Reviews, 65;
11. Chu, L. K., Le, N. T. M. (2022). Environmental quality and the role of economic policy uncertainty, economic complexity, renewable energy, and energy intensity: the case of G7 countries. Environmental Science and Pollution Research, 29(2);
12. Dai, J., Farooq, U., Alam, M. M. (2025). Navigating energy policy uncertainty: Effects on fossil fuel and renewable energy consumption in G7 economies. International Journal of Green Energy, 22(2), 239-252;
13. Elshkaki, A. (2023). The implications of material and energy efficiencies for the climate change mitigation potential of global energy transition scenarios. Energy, 267;
14. Fouquet, R. (2016). Historical energy transitions: Speed, prices and system transformation. Energy research & social science, 22;
15. Fu, H., Guo, W., Sun, Z., Xia, T. (2023). Asymmetric impact of natural resources rent, monetary and fiscal policies on environmental sustainability in BRICS countries. Resources Policy, 82;
16. Hammond, D. R., & Brady, T. F. (2022). Critical minerals for green energy transition: a United States perspective. International Journal of Mining, Reclamation and Environment, 36(9);
17. Hashmi, S. M., Bhowmik, R., Inglesi-Lotz, R., Syed, Q. R. (2022). Investigating the Environmental Kuznets Curve hypothesis amidst geopolitical risk: Global evidence using bootstrap ARDL approach. Environmental Science and Pollution Research, 29(16);

18. Hashmi, S. M., Syed, Q. R., Inglesi-Lotz, R. (2022). Monetary and energy policy interlinkages: The case of renewable energy in the US. Renewable Energy, 201;
19. Hassan, Q., Viktor, P., Al-Musawi, T. J., Ali, B. M., Algburi, S., Alzoubi, H. M., et al. (2024). The renewable energy role in the global energy Transformations. Renewable Energy Focus, 48;
20. Hincapie-Ossa, D., Frey, N., Gingerich, D. B. (2023). Assessing county-level vulnerability to the energy transition in the United States using machine learning. Energy Research & Social Science, 100;
21. Husain, S., Sohag, K., Wu, Y. (2024). The responsiveness of renewable energy production to geopolitical risks, oil market instability and economic policy uncertainty: Evidence from United States. Journal of Environmental Management, 350;
22. Jamil, M., Ahmed, F., Debnath, G. C., Bojnec, Š. (2022). Transition to renewable energy production in the United States: The role of monetary, fiscal, and trade policy uncertainty. Energies, 15(13);
23. Johnston, S., Yang, C. (2019). Policy uncertainty and investment in wind energy. Working Paper;
24. Jurasz, J., Canales, F. A., Kies, A., Guezgouz, M., Beluco, A. (2020). A review on the complementarity of renewable energy sources: Concept, metrics, application and future research directions. Solar Energy, 195;
25. Karapin, R. (2020). Federalism as a double-edged sword: the slow energy transition in the United States. The Journal of Environment & Development, 29(1);
26. Kartal, M. T. (2023). Production-based disaggregated analysis of energy consumption and CO2 emission nexus: evidence from the USA by novel dynamic ARDL simulation approach. Environmental Science and Pollution Research, 30(3);
27. Khan, K., Su, C. W. (2022). Does policy uncertainty threaten renewable energy? Evidence from G7 countries. Environmental Science and Pollution Research, 29(23);
28. Lahiani, A., Mefteh-Wali, S., Shahbaz, M., Vo, X. V. (2021). Does financial development influence renewable energy consumption to achieve carbon neutrality in the USA?. Energy Policy, 158;
29. Li, Z. Z., Su, C. W., Moldovan, N. C., Umar, M. (2023). Energy consumption within policy uncertainty: Considering the climate and economic factors. Renewable Energy, 208;
30. Liu, K., Luo, J., Faridi, M. Z., Nazar, R., Ali, S. (2025). Green shoots in uncertain times: Decoding the asymmetric nexus between monetary policy uncertainty and renewable energy. Energy & Environment;
31. Liu, R., He, L., Liang, X., Yang, X., Xia, Y. (2020). Is there any difference in the impact of economic policy uncertainty on the investment of traditional and renewable energy enterprises? A comparative study based on regulatory effects. Journal of Cleaner Production, 255;
32. Lu, Z., Zhu, L., Lau, C. K. M., Isah, A. B., Zhu, X. (2021). The role of economic policy uncertainty in renewable energy-growth nexus: evidence from the Rossi-Wang causality test. Frontiers in Energy Research, 9;
33. Mayer, A. (2019). National energy transition, local partisanship? Elite cues, community identity, and support for clean power in the United States. Energy Research & Social Science, 50;
34. Mohsin, M., Taghizadeh-Hesary, F., Iqbal, N., Saydaliev, H. B. (2022). The role of technological progress and renewable energy deployment in green economic growth. Renewable Energy, 190;
35. Mouffok, M. A., Mouffok, O. (2025). Wavelet-quantile analysis of the nexus between economic policy uncertainty and sustainable markets: An ESG context. Journal of Cleaner Production;
36. Nakhli, M. S., Shahbaz, M., Jebli, M. B., Wang, S. (2022). Nexus between economic policy uncertainty, renewable & non-renewable energy and carbon emissions: contextual evidence in carbon neutrality dream of USA. Renewable Energy, 185;
37. O'Connor, P. A., Cleveland, C. J. (2014). US energy transitions 1780–2010. Energies, 7(12);
38. Qamruzzaman, M., Karim, S., Jahan, I. (2022). Nexus between economic policy uncertainty, foreign direct investment, government debt and renewable energy consumption in 13 top oil importing nations: Evidence from the symmetric and asymmetric investigation. Renewable Energy, 195;
39. Razmi, S. F., Moghadam, M. H., Behname, M. (2021). Time-varying effects of monetary policy on Iranian renewable energy generation. Renewable Energy, 177;
40. Roemer, K. F., Haggerty, J. H. (2021). Coal communities and the US energy transition: A policy corridors assessment. Energy Policy, 151;

41. Shafiullah, M., Miah, M. D., Alam, M. S., Atif, M. (2021). Does economic policy uncertainty affect renewable energy consumption?. Renewable Energy, 179;
42. Sim, N., Zhou, H. (2015). Oil prices, US stock return, and the dependence between their quantiles. Journal of Banking & Finance, 55;
43. Sinha, A., Ghosh, V., Hussain, N., Nguyen, D. K., Das, N. (2023). Green financing of renewable energy generation: Capturing the role of exogenous moderation for ensuring sustainable development. Energy Economics, 126;
44. Sinha, A., Murshed, M., Das, N., Saha, T. (2025). Modeling renewable energy market performance under climate policy uncertainty: A novel multivariate quantile causality analysis. Risk Analysis. Available at: <https://doi.org/10.1111/risa.17714>;
45. Sohail, M. T., Xiuyuan, Y., Usman, A., Majeed, M. T., Ullah, S. (2021). Renewable energy and non-renewable energy consumption: assessing the asymmetric role of monetary policy uncertainty in energy consumption. Environmental Science and Pollution Research, 28;
46. Solomon, B. D., Krishna, K. (2011). The coming sustainable energy transition: History, strategies, and outlook. Energy policy, 39(11);
47. Su, C. W., Khan, K., Umar, M., Zhang, W. (2021). Does renewable energy redefine geopolitical risks? Energy Policy, 158;
48. Sun, C., Khan, A., Liu, Y., & Lei, N. (2022). An analysis of the impact of fiscal and monetary policy fluctuations on the disaggregated level renewable energy generation in the G7 countries. Renewable Energy, 189;
49. Stokes, L. C., Breetz, H. L. (2018). Politics in the US energy transition: Case studies of solar, wind, biofuels and electric vehicles policy. Energy Policy, 113;
50. Tian, J., Yu, L., Xue, R., Zhuang, S., Shan, Y. (2022). Global low-carbon energy transition in the post-COVID-19 era. Applied energy, 307;
51. Usman, O., Iorember, P. T., Ozkan, O., Alola, A. A. (2024). Dampening energy security-related uncertainties in the United States: The role of green energy-technology investment and operation of transnational corporations. Energy, 289;
52. Wang, K. H., Wen, C. P., Liu, H. W., Liu, L. (2023). Promotion or hindrance? Exploring the bidirectional causality between geopolitical risk and green bonds from an energy perspective. Resources Policy, 85;
53. Wang, X., Li, J., Ren, X. (2022). Asymmetric causality of economic policy uncertainty and oil volatility index on time-varying nexus of the clean energy, carbon and green bond. International Review of Financial Analysis, 83;
54. Xue, C., Shahbaz, M., Ahmed, Z., Ahmad, M., Sinha, A. (2022). Clean energy consumption, economic growth, and environmental sustainability: what is the role of economic policy uncertainty? Renewable Energy, 184;
55. Yi, S., Raghutla, C., Chittedi, K. R., Fareed, Z. (2023). How economic policy uncertainty and financial development contribute to renewable energy consumption? The importance of economic globalization. Renewable Energy, 202;
56. Zhang, R. J., Razzaq, A. (2022). Influence of economic policy uncertainty and financial development on renewable energy consumption in the BRICST region. Renewable Energy, 201;
57. Zhao, Z., Gozgor, G., Lau, M. C. K., Mahalik, M. K., Patel, G., Khalfaoui, R. (2023). The impact of geopolitical risks on renewable energy demand in OECD countries. Energy Economics, 122.

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ARTICLE

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WESTERN ASPIRATIONS IN GEORGIA'S WINEMAKING: STATUS AND PROSPECTS

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Abstract. Since its independence from the Soviet Union in 1991, Georgia has sought to revive its wine's international reputation, diversify wine export destinations, and attract Western wine-loving tourists. Although much still needs to be done to decrease dependence on the Russian market and translate the aspirations into reality, Georgia has progressed in pivoting to the West. The country marketed as the Cradle of Wine has prioritized a Western orientation and holds the prospect of becoming a player in the global wine market. The recommendations provided in this paper are intended to solidify this prospect and break down barriers to entering Western wine and tourism markets. Effective promotion of Georgian wines, the cross-fertilization of wine production and wine and food tourism, and the development of domestic skills and international partnerships should go together with balancing various wine and tourist options. Export diversification should also involve complementing Georgian tradition with innovation, building on Western expertise and funding, and emphasizing premium-level wines, including natural wines.

KEYWORDS: WINEMAKING, GEORGIA, TOURISM, WINE EXPORT.

INTRODUCTION

Georgia – a mountainous country between the Black and Caspian Seas, where Europe meets Asia – is now recognized as a place where wine has been made and celebrated continuously for the last 8000 years.[1] Multidisciplinary international research in archeology, paleoclimatology, chemistry, and biomolecular studies has provided the evidence behind this recognition. It was, however, a Westerner, Hugh Johnson, an English journalist, author, and wine expert, who first referred to Georgia as the Cradle of Wine in his authoritative book Vintage: The Story of Wine.[2]

As Westerners were long fascinated with Georgia and interested in its wines, this paper aims to ascertain Western aspirations in Georgia's winemaking, historically up to the present day, and to analyze the extent to which these aspirations have so far materialized. The Constitution formalized Georgia's integration into the Euro-Atlantic networks as the country's objective. It is, therefore, instructive to test the results of pivoting to the West by the wine and tourism sectors, which are central to Georgia's economy. Wine is the country's second most exported commodity.[3] Analysis of respective export data and an assessment of wine and food tourism can give a sense of Georgia's progress in getting closer to the West. The paper also aims to explore the prospects of wine export diversification away from Russia as a risky traditional destination and provide recommendations for smooth and effective reorientation to the new Western markets. The employed research methods include desk research, analysis of Georgian national and international statistics, and the interviews conducted in May-June 2024 with Westerners working in Georgia's wine industry, as well as Georgian nationals representing the wine business and government agencies.

This paper builds on the previous research of Georgia's winemaking in relation to global wine markets and international trade. Comparison of Georgia with traditional wine-exporting countries and the newcomers in the global wine business has led to an exploration of Georgia's ability to break through and become a viable competitor.[4] In this regard, the work of Kym Anderson, an Australian economist who specializes in trade policy, is especially relevant to our analysis.[5] Given the attractiveness of the United States (US) large and prosperous consumer market, assessments of the prospects for Georgian wines to enter it and develop a favorable position are also of specific interest.[6]

Analysis squarely focused on Georgia's wine industry revealed its strengths, successes, and potential, suggesting its possible attractiveness to Western investors and producers.[7] As Georgia's

1 Maghradze, D., et al. (2016). Grape and wine culture in Georgia, the South Caucasus. 39th World Conference of Vine and Wine, BIO Web of Conferences 7 (03027); Lortkipanidze, D. (ed.). (2017). Georgia the cradle of viticulture. National Geographic Magazine – Georgia in collaboration with the Georgian National Museum. Available at: <https://nationalgeographic.ge/story/georgia-the-cradle-of-viticulture/>.

2 Gelashvili, A. (2024). The Revived Legend of Mukhrani. Sandro Books Publishing; Lordkipanidze, D. (ed.). (2017). Georgia the cradle of viticulture. National Geographic Magazine – Georgia in collaboration with the Georgian National Museum. Available at: <https://nationalgeographic.ge/story/georgia-the-cradle-of-viticulture/>.

3 National Statistics Office of Georgia. (2024). Exports by commodity groups (HS 2 digit level) in 2015-2024. Export. Available at: <https://www.geostat.ge/en/modules/categories/637/export>.

4 Zivzivadze, L., Taktakishvili, T. (2019). Index-based analysis of Georgian wine export's competitiveness on a global market. International Journal of Agricultural Economics, 4(5), pp. 201-206. Available at: <https://sciencepublishinggroup.com/article/10.11648/j.ijae.20190405.12>.

5 Anderson, K. (2020). Is Georgia the next 'new' wine-exporting country? Chapter 13 in The international economics of wine. World Scientific Studies in International Economics, 73, pp. 311-346; Anderson, K. (2012). Rural development in Georgia: what role for wine export growth? Wine Economics Research Centre Working Paper, 0112; Anderson, K. (2009). Wine's New World. Foreign Policy. Available at: <https://foreignpolicy.com/2009/11/02/wines-new-world/>.

6 Beyond the niche: the past, present & future of Georgian wine in the US market. (2021). Wines of Georgia. Available at: <https://winesgeorgia.com/wp-content/uploads/2021/08/Georgia-301-Virtual-Seminar-26-Aug-2021.pdf>; Georgian wine eyes USA market. (2021, September 23). Georgian Journal. Available at: <http://georgianamerica.com/eng/news/georgian_wine_eyes_usa_market_2744>.

7 Granik, L. (2019, July 29). Understanding the Georgian wine boom. Seven Fifty Daily. Available at: <https://

appeal calls for effective marketing of wine, the literature on this topic further informs the chances of the Western orientation of Georgian winemaking and wine exports. For example, it was demonstrated that storytelling as a marketing vehicle, including branding Georgia as the Cradle of Wine, can open new markets by linking the entrepreneurial process to Georgian culture.[8] Bridging winemaking with food and wine tourism was shown to be another strategic marketing tool for Georgia.[9] Vice versa, public relations tips on how to penetrate the Georgian market offered help to Westerners seeking business in Georgia. On a more general note, the exploration of the intersection of wine, society, and business in Georgia enriched the understanding of the national context as well as the influence of geopolitics on Georgia's interactions with Russia and the West.[10]

The paper is organized into six sections. Following the introduction, the second section traces Georgia's Western aspirations from the international fame of the country's 19th-century winemaking, through the post-Soviet revitalization of the wine industry, to the present-day targeting of Western markets, accounting for support from Western and international organizations. Russia's 2006-2012 embargo on Georgian wine and the influence of the Russia-Ukraine war since 2022 are discussed as periods of the swings in Georgia's trade flows that reinforce the need for wine export diversification. The third section addresses the challenges and opportunities of such diversification. It reveals Georgia's persistent dependence on Russian demand for its wine. In contrast, it connects the opportunities for diversification away from Russia with the increase of Georgian wine exports to the US and the European Union (EU). The linkages between Georgia's unique wine culture and wine and food tourism are the theme of the fourth section. Based on the interviews with Westerners working in Georgia's wine business, the fifth section reports their assessments of the wine industry's status and prospects. The concluding sixth section focuses on recommendations.

daily.sevenfifty.com/understanding-the-georgian-wine-boom/>.

8 Rytkönen, P., Vigerland L., Borg, E. (2021). Tales of Georgian wine: storytelling in the Georgian wine industry. Journal of Wine Research, 32(2), pp. 117-133.

9 Marketing research of wine tourism sector in Georgia. (2014, December 20). International Business Development and Investment Promotion Center.

10 Tsereteli, M. (2018, December 7). Georgian wine and its narrative drive development. The Central Asia – Caucasus Analyst. Available at: <https://www.cacianalyst.org/publications/analytical-articles/item/13548-georgian-wine-and-its-narrative-drive-development.html>; Tsereteli, M., Oliker, O., Mankoff, J. (2019, January). Wine, society, and geopolitics. Center for Strategic and International Studies. Available at: <https://csis-website-prod.s3.amazonaws.com/s3fs-public/event/190307_Tsereteli_WineSociety_pageproofs5.pdf>.

PAST AND PRESENT
From the 19th-Century Fame to the Post-Soviet Reconstruction

Westerners' interest in Georgian winemaking traditions and their involvement in the country's wine industry have roots in the 19th century. Prince Alexander Chavchavadze (1786-1846), a poet, Lieutenant-General, and businessman, introduced Western winemaking technology at his hereditary Tsinandali estate, thus contributing to Georgian wine's fame in Europe (Prince, 2024). Prince Ivane Bagrationi-Mukhranbatoni (1811-1895) launched a "golden age" of Georgian winemaking by employing a French agronomist, importing the best foreign machinery and tools, and establishing an efficient European-style farm in his estate not far from Georgia's capital Tbilisi.[11] Mukhranbatoni's smart integration of Georgian traditions and Western innovation paid off. His "Mukhranuli" brand won a gold medal at the 1889 Paris Exposition Universelle.[12]

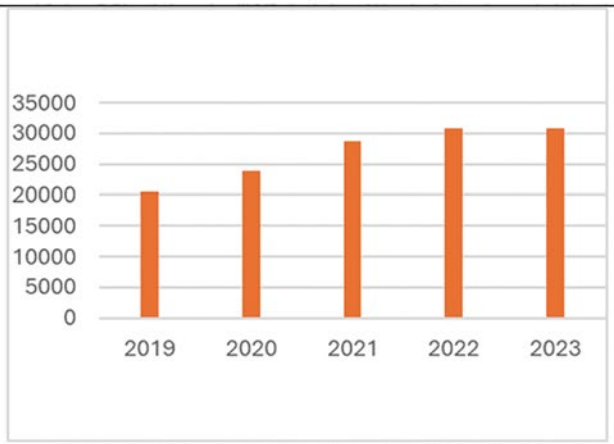
During the first modern wave of globalization in the 19th century, Georgia managed to supply wines not only to the Russian Empire (to St. Petersburg, Moscow, Warsaw, and the Baltic nations), including the Russian imperial court, but also to Western Europe. Georgian wines received wide international recognition in European capitals, such as Paris and Vienna.[13]

11 Gelashvili, A. (2024). The Revived Legend of Mukhrani. Sandro Books Publishing.

12 Ibid.

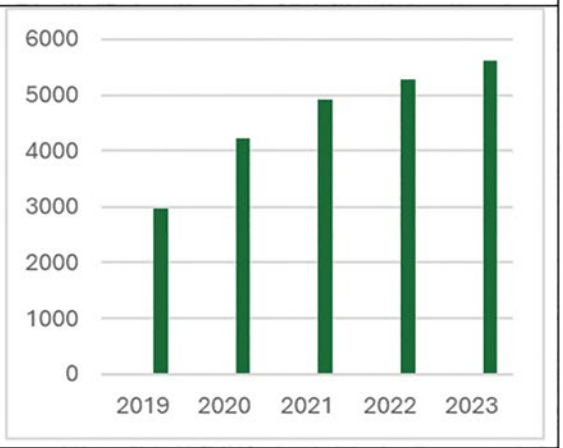
13 Dinello, N. (2022). Centrality of winemaking in Georgia: from prehistoric age to present-day globalization. Journal of Wine Research, 33(3), pp. 123-145.

Graph 1
Georgian Wine Exports (thousand USD) to the EU Countries (2019-2023)



Source: External trade portal, 2024.

Graph 2
Georgian Wine Exports (thousand USD) to the US (2019-2023)



Source: External trade portal, 2024.

In the Soviet period (1921-91), Georgia found itself cut off from international markets and Western technologies and expertise. But following its independence in 1991, the country welcomed international investment and Western winemaking mastery. As an example, the Tsinandali complex associated with the name of Prince Chavchavadze has been, since 2008, under the patronage of the Silk Road Group, which is owned and run by Georgian and European partners.[14] The restoration of the decrepit palace and farm of Prince Mukhranbatoni led to the creation in 2010 of the joint-stock company Château Mukhrani, now owned by the Swedish businessman and founder of the Marussia Beverages Group, Frederick Paulsen.[15]

Russia's Wine Embargo as a Stimulus for Export Diversification

Russo-Georgian post-Soviet relations have been marked by hostility and distrust, mostly caused by Russia's support of the secessionist regions of Abkhazia and South Ossetia. In this atmosphere, in 2006, the Russian government introduced an embargo on Georgian wine under the pretext of its low safety and quality standards. Considering that Russia accounted at that time for 80 percent of Georgian wine exports, the losses from this embargo were extensive. Whereas the share of Georgia's wine production volume that was exported grew rapidly between 2000-2005 to nearly 50 percent, it collapsed to just 7 percent by 2007.[16]

Trading with the West—the European countries and the US—became Georgia's primary objective in the post-Soviet period, especially during the years of Russia's wine embargo. There are some achievements in this area. Georgia's wine exports to the EU countries surged threefold during the decade of 2009-2018, have been expanding since then, and reached $31 million in 2023 (Graph 1). Similarly, Georgia's wine exports to the US experienced significant growth. They increased 1.5 times from 2009 to 2018 and totaled $5.6 million in 2023 (Graph 2).

Western Support for Winemaking in Georgia

Western institutions are at the forefront of revitalizing Georgia's winemaking. The USAID/Georgia's Economic Security Program, implemented since 2006, has helped the Georgian government with the export of wine to the West, especially the US, and wine-related tourism. In partnership

14 Tsinandali Estate Museum. (2024). Available at: <http://tsinandali.ge/en/museum/about-us>.

15 Gelashvili, A. (2024). The Revived Legend of Mukhrani. Sandro Books Publishing; World's Best Vineyards. (2024). 47 Château Mukhrani, Mukhrani, Georgia.

16 Anderson, K. (2012). Rural development in Georgia: what role for wine export growth? Wine Economics Research Centre Working Paper, 0112.

with the Wine Association of Georgia and the Wine Club, USAID supported multiple wineries to enable their readiness to accept tourists and trained wine guides.[17] USAID also partnered with the Georgian Orthodox Church and Badagoni Winery to create the Alaverdi Heritage Trail to increase international tourism.[18]

Within the theme of "Unlocking Potential for Georgian Wine in US Markets", the USAID Agriculture Program has supported small and medium-sized winemaking enterprises in terms of marketing and export. In collaboration with the US-based crowdsourced insights company Premise, USAID explored market trends and consumer preferences from three US markets: California, New York City, and Washington, D.C.[19] It also offered export grants and provided funding for wine degustation and trade missions, and fairs.

Likewise, multilateral international organizations have entered Georgia's wine scene. The World Bank's Regional Development Project for Georgia has worked to improve infrastructure services and institutional capacity to support the development of a tourism-based economy and cultural heritage circuits in the winemaking Kakheti region. The World Bank has also sought to enhance the institutional capacity and performance of national institutions, such as the Georgia National Tourism Administration (GNTA) and the Agency for Culture Heritage Preservation of Georgia (ACHP).[20] Furthermore, the United Nations' Food and Agriculture Organisation's (FAO) "Inclusive Rural Development and Sustainable Agriculture" project has benefited winemaking among other agricultural segments.[21]

The international efforts are in tune with the priority of the National Wine Agency (NWA) of Georgia, which is to market Georgian wines to the West, especially European countries and the US. The NWA organizes international exhibitions and presentations of wine, wine festivals, and the International Qvevri Competition, promoting the ancient Georgian method of using terra cotta urns buried in the ground for fermenting crushed grapes. It also participates in wine expos and fairs, supports exchanges among wine professionals across the world, and holds Ghvino (ღVino) Forums of America in collaboration with the America Georgia Business Council.[22]

Russia-Ukraine War and its Implications for Georgia's Wine Exports

Following the onset of the Russia-Ukraine war in February 2022, Georgia's economic dependence on Russia increased compared to previous years. In 2022, about 15 thousand Russian companies were registered in Georgia, 16 times more than the number in 2021. Georgian exports to Russia increased by 6.8%, and imports from Russia rose by 79%.[23] A recovery in tourism and a surge in immigration, financial inflows, and transit trade triggered by the war have boosted GDP growth and fiscal revenues. Although financial inflows sparked by the war have recently moderated, by early 2024, they remained above prewar levels, supporting a positive macroeconomic outlook.[24]

Under these war-related economic conditions, Georgia's dependence on the Russian market in terms of wine exports intensified.[25] In 2023, wine ranked first in the exports of Georgian goods to

17 USAID/Georgia's Economic Security Program: Mid-Term Evaluation (2022, June). Final Report, pp. 33, 41, 43-44. Available at: <https://pdf.usaid.gov/pdf_docs/PA00ZGXC.pdf>.

18 USAID Economic Security Program. (2023, January 15). Quarterly report. Quarter 1 FY23: October – December 2022. Available at: <https://pdf.usaid.gov/pdf_docs/PA02122H.pdf>.

19 USAID Agriculture Program. (2023). Unlocking potential for Georgian wine in US markets. Cultivating New Frontiers in Agriculture (CNFA).

20 Georgia – regional development project. (2012, February 22). World Bank Group.

21 Agenda.ge. (2024, April 26). Georgia, FAO sign new $4m project to boost sustainable agriculture, rural development. Available at: <https://agenda.ge/en/news/2024/38857#gsc.tab=0>.

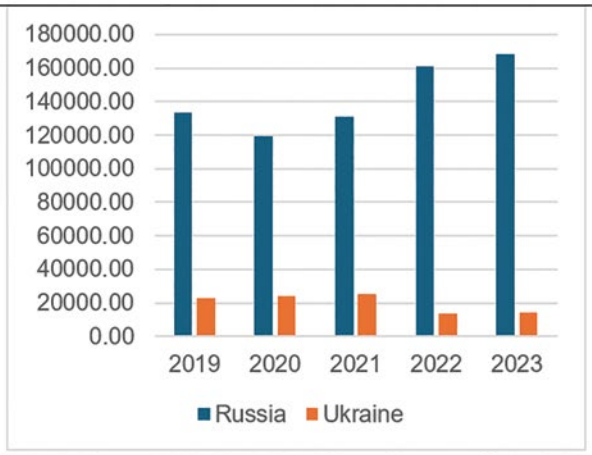
22 LEPL National Wine Agency. (2024). Available at: <https://wine.gov.ge/En/Page/mainactivities>.

23 Transparency International, Georgia. (2023, February 23). Georgia's economic dependence on Russia: impact of the Russia-Ukraine war.

24 IMF Country Report No. 24/135. (2024, May). Georgia: 2024 article IV consultation—press release, staff report, and statement by the executive director for Georgia.

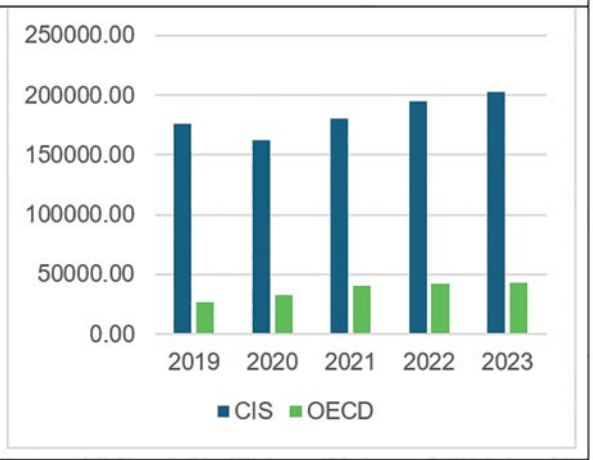
25 Transparency International, Georgia. (2023, February 23). Georgia's economic dependence on Russia: impact of the Russia-Ukraine war.

Graph 3
Georgian Wine Exports (thousand USD) to Russia and Ukraine (2019-2023)



Source: External trade portal, 2024.

Graph 4
Georgian Wine Exports (thousand USD) to CIS and OECD Countries (2019-2023)



Source: External trade portal, 2024.

the Russian market, amounting to $168 million[26] and constituting a 29% increase from 2021. In contrast, wine exports to Ukraine declined by 42% in 2023, compared to 2021, and totaled $14 thousand, or 12 times less than respective exports to Russia (Graph 3). During the same period of 2021-2023, Georgian wine exports to the Commonwealth of Independent States (CIS), countries of the former Soviet Union that include Russia and its allies, increased by 13% and reached $203 million in value. The same exports to the member states of the Organisation for Economic Co-operation and Development (OECD), which is dominated by Western countries, increased by only 5% and reached the $43 million mark in 2023, which is four times less than exports to the CIS (Graph 4).

CHALLENGES AND OPPORTUNITIES OF WINE EXPORT DIVERSIFICATION

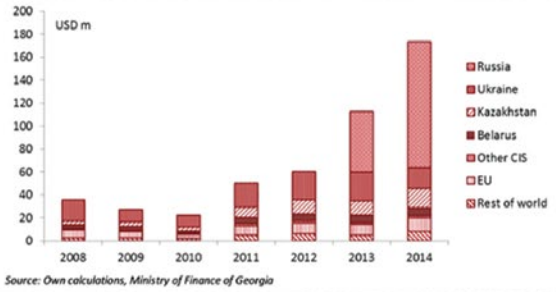
Challenges

According to a study conducted by the German Economic Team Georgia and ISET-PI, during the years of the Russian embargo (2006-2012), demand for Georgian wine in the EU and non-CIS countries was not able to replace the Russian market (Graph 5).[27] Some observers argued that the Russian em-

26 Transparency International, Georgia. (2024, February 16). Georgia's economic dependence on Russia: summary of 2023.

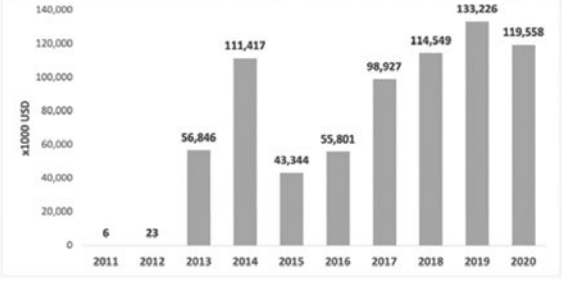
27 Von Cramon-Taubadel, S., Saha, D. (2015, May). Short-run risks and long-run challenges for wine production in Georgia. Policy Paper Series, German

Graph 5
Georgian Wine Exports by Destination (2008-2014)



Source: Von Cramon-Taubadel & Saha, 2015.

Graph 6
Georgian Wine Exports to Russia (2011-2020)



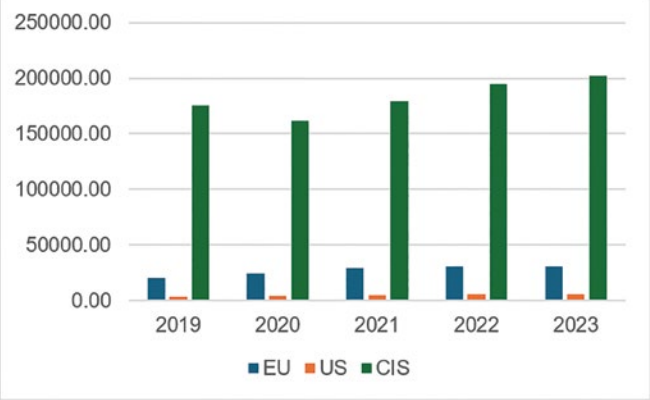
Source: External trade portal, 2021.

bargo was a blessing rather than a curse for Georgia's winemaking as it stimulated improvement in the quality of wine and diversification of the country's exports. Most producers were, however, happy to see the ban lifted, which made wine exports to Russia rise substantially (Graph 6). Upon the end of the embargo in 2013, Georgia's exports to Russia skyrocketed to an amount worth more than $111 million in 2014.[28]

The same happened as a result of the Russia-Ukraine war, which propelled Georgia's wine exports to Russia to an unprecedented value of $168 million.[29] Exports to the EU and US continue to be dwarfed by those to the CIS countries (Graph 7). Within the CIS, Russia remains the major importer of Georgian wines, up to 83% in 2023. Russia's imports amounted to 60% of Georgia's total wine exports in 2018 and increased to 65% in 2023, the highest figure since 2005.[30]

Graph 7

GEORGIAN WINE EXPORTS (THOUSAND USD) TO THE CIS COUNTRIES COMPARED TO EXPORTS TO THE EU AND US (2019-2023)



Source: External trade portal, 2024.

The current export statistics suggest that much is still to be done to diversify Georgia's wine exports away from Russia. Neighboring Russia is Georgia's traditional market. This explains its large share of Georgia's exports. The external circumstances have contributed to maintaining and even enlarging this share, compared to the previous years.

Yet, Georgia's wine exports no longer face an 80% dependence on the Russian market as before Russia's wine embargo, and the developments since then have shown that the export quantity can be detrimental to wine quality. Therefore, entry into high-value Western markets with high-quality goods and products has been pushed to the top of Georgia's agenda, which calls for increasing awareness of Georgian wines, reducing entry costs to new markets, and aligning the supply of particular wines with demand.

OPPORTUNITIES

The swings in Georgia's trade flows due to outside factors and difficulties in reorienting the country's commerce toward the West do not mean that diversification of wine exports is a lost cause. The 2006-2012 embargo period remains a sore reminder of the urgency of strengthening trade relations with other countries, especially those in the West. At the same time, revenue from sales on the Russian market after the end of the embargo allowed for continuing improvements in Georgia's wine industry.[31] The effect of the Russia-Ukraine war on Georgia's economy has been waning, and although the high dependence of wine exports on the Russian market persists, the end of the war can bring changes.

Economic Team Georgia and ISET Policy Institute, Berlin/Tbilisi, 7.

28 National Statistics Office of Georgia. (2024). External trade portal. Available at: <https://ex-trade.geostat.ge/en>.

29 Transparency International, Georgia. (2024, February 16). Georgia's economic dependence on Russia: summary of 2023.

30 National Statistics Office of Georgia. (2024). External trade portal. Available at: <https://ex-trade.geostat.ge/en>; Transparency International, Georgia. (2024, February 16). Georgia's economic dependence on Russia: summary of 2023.

31 Buckley, N. (2013, February 4). Georgian wine to flow as Russia lifts ban. Financial Times. Available at: <https://www.ft.com/content/13269432-6ee9-11e2-9ded-00144feab49a>; Sharkov, D. (2016, March 3). Russian imports of Georgian wine skyrocket after ban is lifted. Newsweek. Available at: <https://www.newsweek.com/russian-imports-georgian-wine-skyrocket-after-lifted-ban-434698>.

Prioritizing the US in Wine Export Diversification

With support from Georgian government agencies and international organizations, the wine industry is pushing forward. Georgia attributes the utmost importance to the US as the two countries signed the US-Georgia Charter on Strategic Partnership (2009) and reaffirmed the Charter's principles on its 10th anniversary (2019). Georgia and the US also signed a bilateral investment treaty and a bilateral trade and investment framework agreement.[32]

There are also specific wine-related reasons for targeting the US market. The US tops the list of countries whose population drinks the most wine in terms of total volume, accounting for around 15% of the world's total wine consumption.[33] According to Tamta Kvelaidze, Head of the Marketing & PR Department at the NWA, the agency prioritizes marketing Georgian wines to the US as the world's largest wine consumer. The NWA has contractors in all markets; in the US, it is Colangelo & Partners, an integrated communications agency specializing in food, wine, and spirits, with offices in New York City and San Francisco.[34] The Teliani Valley company[35] one of Georgia's largest wine producers, opened its office in the US, established its own distribution company and warehouse in California, and launched an extensive marketing campaign. If successful, Teliani Valley's strategy can be replicated by other winemakers in Georgia.[36]

Since 2013, the US market for Georgian wines has been one of the fastest growing and showed an almost eightfold increase in dollar terms and nearly sixfold expansion in volume.[37] Cooperation between Georgian and US wineries and educational visits to Georgia by members of the US Wine Lovers Club have sought to support this upward trajectory by raising awareness of Georgian wine.[38]

To accurately assess the status and potential of Georgia's exports to the US, different segments of the wine market should be considered. The recent worldwide trend, which is expected to continue, is "premiumization – the demise of non-premium wine and the emergence of commercial premium wine". The volume of consumption of fine and commercial premium wines was projected to be about one-sixth higher, and the volume of non-premium wine slightly lower in 2025 than in 2016–2018.[39]

The US market, one of the most affluent consumer markets, is deemed to be a high-value one for Georgian wine because of the comparatively high prices.[40] According to Zurab Mgvdliashvili, a co-founder of the Natural Wine Association of Georgia, the US is an almost single importer of the premium-segment natural wines produced by the 120 members of his association. Whereas in 2023, the overall annual export of Georgian wines reached 89.5 million liters or almost 120 million bottles,[41] the country's export of natural wines counts in a couple of thousand bottles. Yet, the latter export can be more lucrative as a bottle of natural wine is four times more expensive than an average bottle.[42]

Market research has revealed the following key obstacles faced by Georgian wine exporters in the US: high logistics costs, complex US legislation, limited awareness of Georgian wine, and copyright issues.[43] These are serious barriers, but they

32 The Embassy of Georgia to the United States of America. (2021). High-level trade dialogue (HLTD). Available at: <https://georgiaembassyusa.org/bilateral-trade/>.

33 Mercer, C. (2023, May 24). Which countries drink the most wine? Ask Decanter. Decanter. Available at: <https://www.decanter.com/wine-news/which-countries-drink-the-most-wine-ask-decanter-456922/>.

34 Colangelo & Partners (2024). Available at: <https://www.colangelopr.com/>.

35 Teliani Valley. (2024). Available at: <https://www.telianivalley.com/en>.

36 Interview with Kvelaidze, T. (2024, June 3).

37 National Statistics Office of Georgia. (2024). External trade portal Available at: <https://ex-trade.geostat.ge/en>.

38 Gambashidze, D. (2023, July 31). Georgian wine is gearing up to strengthen its position in the US market. Forbes.

39 Anderson, K., Pinilla, V. (2021). Wine's belated globalization, 1845–2025. AAEA Agricultural & Applied Economics Association – Wiley, pp. 750, 761-762.

40 Numbeo. (2024). Price rankings by country of bottle of wine (mid-range) (markets). Available at: <https://www.numbeo.com/cost-of-living/country_price_rankings?itemId=14>.

41 National Wine Agency of Georgia. Export of wine and alcoholic beverages. (2024, February 9).

42 Interview with Mgvdliashvili, Z. (2024, June 7).

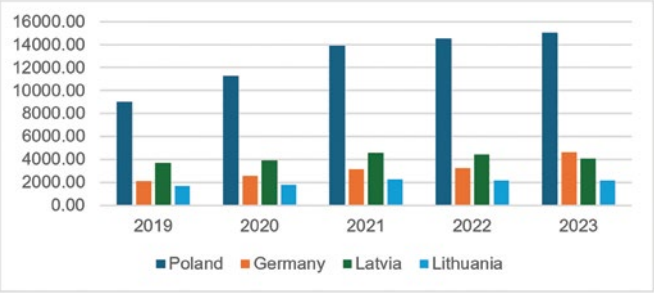
43 Gambashidze, D. (2023, July 31). Georgian wine is gearing up to strengthen its position in the US mar-

are not insurmountable. Julie A. Peterson, Managing Partner at the Marq Wine Group and a former NWA contractor, underscored and celebrated the impressive growth of Georgian wine exports to the US. "The challenge is to sustain this growth; the key is to keep traction", advised Ms. Peterson.[44]

Expanding to the EU

In 2014, Georgia and the EU signed an Association Agreement, which included the Deep and Comprehensive Free Trade Agreement (DCFTA), allowing Georgian products to enter the EU market without customs duty.[45] The top importers of Georgian wine among EU members in 2023 were Poland, Germany, Latvia, and Lithuania (Graph 8). Poland consistently played a leading role: in 2023, it accounted for 49% of Georgian wine exports to the EU and was the second-top importer of Georgian wine in the world, although its 6% share was much smaller than the 65% share of Russia. In 2023, Germany overtook Latvia as the #2 EU importer of Georgian wine.[46]

Graph 8
TOP IMPORTERS OF GEORGIAN WINE (THOUSAND USD) AMONG EU MEMBER COUNTRIES (2019-2023)



Source: External trade portal, 2024.

The NWA places Germany and Poland as the best candidates after the US for extensive marketing and export diversification.[47] According to the 2023 data, Germany was fourth in the world among countries whose population drinks the most wine and was the fifth in per capita wine consumption.[48] At the same time, Germany was ranked as the eighth-largest producer of wine in 2023.[49] Although France and Italy are top wine consumers after the US, Georgia hardly exports its wine to these countries, ranked in 2023 as first and second wine producers.[50] In contrast, Poland, which is known for vodka and beer but not wine, is a promising importer.

Wine Culture as a Driver of Tourism

Georgia is not only a wine country. It is also a land of exceptional natural beauty, a long and unique history, and an extraordinary landscape and ecological diversity. All these characteristics are attractive for tourism, but Georgia's wine culture has emerged as the country's leading promoter. "Tasting local cuisine and wine" was one of the most popular tourist activities, the second only after shopping, in 2022.[51] In 2023, it became the top activity, as 78.1% of international visitors cited it.[52] In 2022, the added value of Georgia's tourism-related industries as a share of GDP in-

ket. Forbes.

44 Interview with Peterson, J. (2024, June 5).

45 Enterprise Georgia. (2024). Free trade regimes.

46 National Statistics Office of Georgia. (2024). External trade portal. Available at: <https://ex-trade.geostat.ge/en>.

47 Interview with Kvelaidze, T. (2024, June 3).

48 Mercer, C. (2023, May 24). Which countries drink the most wine? Ask Decanter. Decanter. Available at: <https://www.decanter.com/wine-news/which-countries-drink-the-most-wine-ask-decanter-456922/>.

49 World Population Review. (2024). Wine producing countries 2024. Available at: <https://worldpopulationreview.com/country-rankings/wine-producing-countries>.

50 Mercer, C. (2023, May 24). Which countries drink the most wine? Ask Decanter. Decanter. Available at: https://www.decanter.com/wine-news/which-countries-drink-the-most-wine-ask-decanter-456922/>; World Population Review. (2024). Wine producing countries 2024. Available at: <https://worldpopulationreview.com/country-rankings/wine-producing-countries>.

51 Georgian National Tourism Administration. (2023). Georgian tourism in figures: structure and industry data 2022. Available at: <https://gnta.ge/wp-content/uploads/2023/09/2022-eng-1.pdf>.

52 Georgian National Tourism Administration. (2024). Conducted Activities. International Visitors Survey. Available at: <https://gnta.ge/wp-content/uploads/2024/02/International-Visitor-Survey-2023.xlsx>.

creased from 6.7% to 7.2%. More than 20% of this value was driven by food and beverage services.[53]

Tourism offers an opportunity to sell wine directly to consumers in wineries and plays a critical role in the advancement of local communities. Many rural producers in Georgia do not have distribution contracts enabling them to retail their wine. Therefore, the openness of their establishments for visitation, which typically includes tours, tastings, and opportunities to purchase beverages, is indispensable.[54]

Similar to winemaking, tourism can generate secondary economic activity. Accounting for its effect on other sectors of the economy, it was estimated that in 2018, before the COVID-19 pandemic, 31.3% of Georgia's GDP depended on the travel and tourism industry, including parks and transportation.[55] On average, tourism's direct and indirect contribution to Georgia's total economy is more than 25%, whereas this figure for the global economy is only about 7.5%.[56]

Advertising Georgia as the Cradle of Wine and wine as a symbol of Georgian national identity has naturally connected wine production with wine and food tourism, and wine culture has become one of the drivers of global awareness of and interest in Georgia. In 2023, 7.1 million international travelers visited Georgia, and the country received a record $4.1 billion in tourism revenue.[57]

The largest number of visitors (1.2 million) in 2023 was from Russia, amounting to 23.2% of the total number of visitors, followed by Turkey (21.4%) and Armenia (13.5%). Correspondingly, the citizens of Russia, Turkey, and Armenia made the most visits (Graph 9).[58]

As is seen in Graph 10, compared to the largest shares of visits to Georgia from Russia and Turkey, the number of visits from the EU member countries has been small and has not yet returned to the pre-pandemic level. As for visits from "other countries", a category that includes the US, their number has exceeded the pre-pandemic level in 2022 and increased further in 2023. The proportion of visits by EU visitors in the total number of visits to Georgia was 6% in 2023.[59]

The International Visitor Surveys conducted by the GNTA at airport or land border checkpoints of-

53 Georgian National Tourism Administration. (2023). Georgian tourism in figures: structure and industry data 2022. Available at: <https://gnta.ge/wp-content/uploads/2023/09/2022-eng-1.pdf>.

54 Extension – University of Georgia. (2024). Georgia's Alcoholic Beverage Industry 2024 Outlook.

55 Quinn, C. (2020, April 1). The tourism industry is in trouble. Foreign Policy. Available at: <https://foreignpolicy.com/2020/04/01/coronavirus-tourism-industry-worst-hit-countries-infographic/>.

56 Shamugia, E. (2023, October 17). Tourism: Georgia and the region. Forbes: Georgia. Available at: <https://forbes.ge/en/tourism-georgia-and-the-region/>.

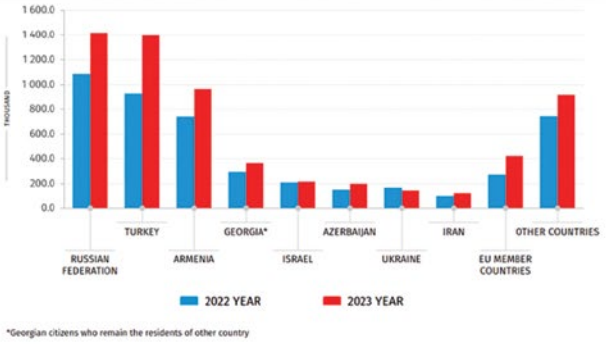
57 Georgia National Tourism Administration. (2024, February 12). Record $4.1 billion in tourism revenue and 7.1 million international travelers – 2023 statistics.

58 National Statistics Office of Georgia. (2024). Inbound tourism statistics in Georgia. Available at: <https://www.geostat.ge/media/59934/Inbound-Tourism-Statistics---%282023-year%29.pdf>.

59 Ibid.

Graph 9

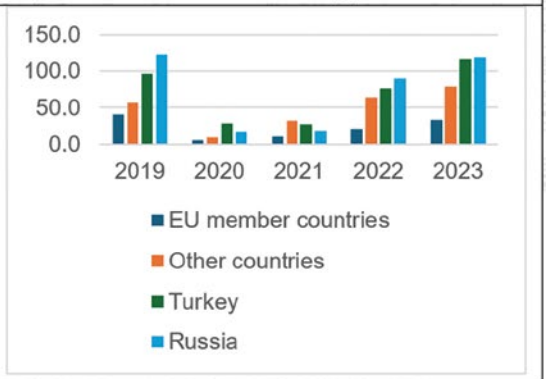
Number of Visits by Visitors by the Country of Citizenship, 2022-2023



Source: Inbound tourism, 2024.

Graph 10

Number of Visits by EU & Other Visitors Compared to Russia & Turkey, 2019-2023



Source: Inbound tourism, 2024.

fer more detailed data. It turns out that both before the COVID-19 pandemic in 2019 and recently in 2023, Western visitors stayed substantially longer in Georgia than those from Turkey. For example, the average length of stay of US citizens was 10 nights in 2023, compared to 1.9 nights for visitors from Turkey. At the same time, US visitors stand out as higher spenders. Their average expenditures were almost twice as high in 2023 as spending by visitors from Poland and France.[60] Considering that a large share of visitors' expenditures is consistently registered on served food and drinks, spending on wine consumption significantly increases the proceeds of tourism to Georgia.[61]

These data reiterate the point about the difference between high-value and low-value economic activity. As Georgian wine exporters target markets in the US and other Western countries, the country's tourist organizations are especially interested in visitors from these countries because of the expectations of higher returns. International tourism helps the Georgian wine sector and vice versa. Visitors touring wineries and buying directly from sellers drive higher demand for Georgian wine delivered to their home countries. Conversely, increased awareness of Georgian wine attracts more wine enthusiasts to visit the country.

Westerners in Georgia's Wine Business: Assessment of Industry's Status and Prospects

Looking beyond statistical data, the interviews conducted in May-June 2024 with Westerners working in Georgia's wine industry revealed a buoyant mood about the country's prospects in the global wine market.[62] "Georgia is extremely exceptional: it has a perfect story – amazing history, tradition, sustainable farming, and also good wines, including the natural ones", stated Julie A. Peterson, a US consultant. This positive assessment was shared by Patrick Honnef, the Germany-born CEO of Château Mukhrani, who referred to a "renaissance of Georgian wine culture": "Ten years ago, there was no wine agency, no national tourist administration, and no wine associations. Now there is a young generation that is better educated, the quality of wine is improving, and overall, it is a thrilling time".

Olivier Sauvage, a French businessman and consultant, agreed that "winemaking in Georgia has potential", but also pointed to the challenges: the predominance of semi-sweet wines in Georgian exports, which are not favored by younger generations, and the lack of professionalism compared to the international level. He also highlighted the relatively high price of Georgian mass-produced wines, compared to the prices of international competitors, such as Spain or Chile. The reason behind the high price is small-scale production in Georgia and the large costs of supplies and logistics. Both Mr. Sauvage and Mr. Honnef also pointed to the constraints of land legislation, which allows foreigners to buy land only in cooperation with Georgian residents and thus limits the scale of wine production. The lack of foreign investment is another barrier.

The question is what's to be done to ensure further progress. "Wine is the number one value export of Georgia, it can transform the Georgian economy", said Ms. Peterson, referring to the benefits of entering the US market with its 19 million consumers of wine. Georgian wines are sold on average for $5.15 a bottle in the US market and only for $2 a bottle in Russia; some wineries can sell for $9-$11 a bottle.

As for skills, Mr. Honnef values his young Georgian staff hired fresh from the Agricultural University and the Technical University in Tbilisi, and also sees promise in interns attracted to work with him. There are study-abroad programs supported by universities, the EU, and USAID, which open opportunities, but more investment in travel, train-

60 Georgia National Tourism Administration. (2024). International visitor survey 2015-2023. Available at: <https://gnta.ge/wp-content/uploads/2024/02/International-Visitor-Survey-2023.xlsx>.

61 Georgian National Tourism Administration. (2023). Georgian tourism in figures: structure and industry data 2022. Available at: <https://gnta.ge/wp-content/uploads/2023/09/2022-eng-1.pdf>; National Statistics Office of Georgia. (2024). Inbound tourism statistics in Georgia. <https://www.geostat.ge/media/59934/Inbound-Tourism-Statistics---%282023-year%29.pdf>.

62 Interviews with Honnef, P. (2024, May 24), Peterson, J. (2024, June 5), & Sauvage, O. (2024, May 5).

ing, and international partnerships is needed.

Georgia is proud of its winemaking tradition, but tradition must be balanced with and reinforced by international expertise. "Georgians need to learn, need innovation," underscored Mr. Sauvage. Mr. Honnef was upbeat in this regard: "Today the new generation understands the global market and competition from abroad and seeks higher wine quality and new markets. Progress comes with open-mindedness and innovation".

Prioritizing Western markets means an increasing emphasis on premium-level wines. According to Ms. Peterson, "Georgia needs to make exceptional wines and to align the types of wines with trends in wine consumption". Mr. Honnef agreed with the preferred focus of Georgia on premium-level wines but advocated gradual diversification of the types of wines (contingent on demand) and steady development of new markets, such as the US and Germany, while maintaining the traditional ones. Pivoting to the West – both in terms of wine exports and wine and food tourism – should offer increasing financial returns. It can also have a political impact. But as Georgia is determined to strengthen its international outreach, shifts should not be abrupt.

"Georgia must stay on course but adjust every year. Marketing must be integrated with building logistics, skills, distribution, and sales – all components must work together. This country has all the ingredients for success and demonstrated progress; it just needs to stay the course, not slow the way forward", emphasized Ms. Peterson.

CONCLUSION

Based on the findings of desk research and assessments, and suggestions of the interviewed Georgians and Western experts, the following conclusions and recommendations can be made.

- The wine industry is a priority sector of Georgia's economy. Wine was the second most exported commodity in Georgia in both 2023 and the first half of 2024.63 The rank of wine in Georgia's exports has increased compared to 2018, when the wine industry was the fifth-largest export generator for the country.64 The share of wine exports in Georgia's GDP has been growing along with the GDP growth,65 and the wine industry provides a multiplier effect on the economy as it is closely linked with its major sectors. Hence, mastering Western markets is worth pursuing, as every expansion of Georgian exports to the West is not merely a source of revenue but an engine of economic growth and social development.
- Effective marketing is imperative for positioning Georgian wines in the Western markets. As storytelling is an important marketing vehicle, Georgia's story as the Cradle of Wine combines history and tradition and suggests continuity through sustainable farming. As "tasting local cuisine and wine" is one of the most popular tourist activities in Georgia, the cross-fertilization of wine production and wine and food tourism is beneficial for the national economy and global awareness of the country. Marketing should not, however, stand alone; it must be integrated into the entire system of wine production, tourism management, and skills development. It should also constantly improve, building on the successes of international partnerships and marketing campaigns and learning lessons from the operation of offices and distribution companies abroad.
- There is a consensus about the need to develop wine export markets beyond Russia and decrease dependence on Russia. However, the benefits of maintaining exports to

63 National Statistics Office of Georgia. (2024). Exports by commodity groups (HS 2 digit level) in 2015-2024. Export. Available at: <https://www.geostat.ge/en/modules/categories/637/export>.

64 Tsereteli, M. (2018, December 7). Georgian wine and its narrative drive development. The Central Asia – Caucasus Analyst. <https://www.cacianalyst.org/publications/analytical-articles/item/13548-georgian-wine-and-its-narrative-drive-development.html>.

65 Jmukhadze, N. (2022. August 1). The role and influence of wine export on the economic growth of Georgia. Forbes. Available at: <https://forbes.ge/en/ghvinis-eqsportis-roli-da-gavlena-saqarthvelos-ekonomikur-zrdaze/>.

Russia are also recognized. The same applies to balancing various tourist markets. Although pivoting to the West is expected to offer both economic and political advantages to Georgia, shifts in export and tourism strategies should be well-prepared and measured. Gradual diversification of the types of wines and steady development of new Western markets, such as the US and Germany, should go together with preserving the traditional ones. This gradual strategy is most feasible and beneficial.

- Georgian wine exporters face serious barriers in the West, ranging from high logistics costs to copyright issues and a mismatch between the types of wines produced and the global demand. Georgian mass-produced wines are also expensive, compared to the prices of international competitors, because of Georgia's small scale of grape cultivation, the high costs of supplies, the constraints of land legislation, and the lack of foreign investment. To break down these barriers, it is crucial to complement Georgian tradition with innovation and to inject Western expertise and funding, both via private ventures and state and international assistance. To make Georgian wines viable in the global market, enhanced professionalism of winemakers, higher wine quality, and aligning the types of exported wines with wine consumption trends are essential.
- Given the characteristics of Georgia's agriculture and winemaking, the country can hold a prominent position in niche markets in the world. As the recent worldwide trend is "premiumization", Georgia is well-positioned to emphasize premium-level wines, including natural wines, in its production and exports. The US and Germany are the best among affluent high-value markets for the premiumization of Georgian exports and a focus on natural wines. In choosing major targets for export diversification, the recipient countries' per-capita consumption of wine, the volume of their wine production, and the relative competitiveness of their wine industries should be considered. Similarly, attracting high-value tourists from the US and Germany can yield higher returns, including through visitors' expenditures on wine.

BIBLIOGRAPHY:

1. Agenda.ge. (2024, April 26). Georgia, FAO sign new $4m project to boost sustainable agriculture, rural development. Available at: https://agenda.ge/en/news/2024/38857#gsc.tab=0;
2. Anderson, K. (2009). Wine's New World. Foreign Policy. Available at: https://foreignpolicy.com/2009/11/02/wines-new-world/;
3. Anderson, K. (2012). Rural development in Georgia: what role for wine export growth? Wine Economics Research Centre Working Paper, 0112;
4. Anderson, K. (2020). Is Georgia the next 'new' wine-exporting country? Chapter 13 in The international economics of wine. World Scientific Studies in International Economics, 73;
5. Anderson, K., Pinilla, V. (2021). Wine's belated globalization, 1845–2025. AAEA Agricultural & Applied Economics Association – Wiley;
6. Buckley, N. (2013, February 4). Georgian wine to flow as Russia lifts ban. Financial Times. Available at: https://www.ft.com/content/13269432-6ee9-11e2-9ded-00144feab49a;
7. Colangelo & Partners (2024). Available at: https://www.colangelopr.com/;
8. Dinello, N. (2022). Centrality of winemaking in Georgia: from prehistoric age to present-day globalization. Journal of Wine Research, 33(3);
9. Enterprise Georgia. (2024). Free trade regimes;
10. Extension – University of Georgia. (2024). Georgia's Alcoholic Beverage Industry 2024 Outlook;

11. Gambashidze, D. (2023, July 31). Georgian wine is gearing up to strengthen its position in the US market. Forbes;
12. Georgian Journal. (2021, September 23). Georgian wine eyes USA market. Available at: http://georgianamerica.com/eng/news/georgian_wine_eyes_usa_market_2744;
13. Georgian National Tourism Administration. (2023). Georgian tourism in figures: structure and industry data 2022. Available at: https://gnta.ge/wp-content/uploads/2023/09/2022-eng-1.pdf;
14. Georgian National Tourism Administration. (2024). Conducted Activities. International Visitors Survey. Available at: https://gnta.ge/wp-content/uploads/2024/02/International-Visitor-Survey-2023.xlsx;
15. Georgia National Tourism Administration. (2024). International visitor survey 2015-2023. Available at: https://gnta.ge/wp-content/uploads/2024/02/International-Visitor-Survey-2023.xlsx;
16. Georgia National Tourism Administration. (2024, February 12). Record $4.1 billion in tourism revenue and 7.1 million international travelers – 2023 statistics;
17. Gelashvili, A. (2024). The Revived Legend of Mukhrani. Sandro Books Publishing;
18. Granik, L. (2019, July 29). Understanding the Georgian wine boom. Seven Fifty Daily. Available at: https://daily.sevenfifty.com/understanding-the-georgian-wine-boom/;
19. IMF Country Report No. 24/135. (2024, May). Georgia: 2024 article IV consultation—press release, staff report, and statement by the executive director for Georgia;
20. International Business Development and Investment Promotion Center. (2014, December 20). Marketing research of wine tourism sector in Georgia;
21. Interviews with Honnef, P. (2024, May 24), Mgvdliashvili, Z. (2024, June 7), Kvelaidze, T. (2024, June 3), Peterson, J. (2024, June 5), & Sauvage, O. (2024, May 5);
22. Jmukhadze, N. (2022. August 1). The role and influence of wine export on the economic growth of Georgia. Forbes. Available at: https://forbes.ge/en/ghvinis-eqsportis-roli-da-gavlena-saqarthvelos-ekonomikur-zrdaze/;
23. LEPL National Wine Agency. (2024). Available at: https://wine.gov.ge/En/Page/mainactivities;
24. Lordkipanidze, D. (ed.). (2017). Georgia the cradle of viticulture. National Geographic Magazine – Georgia in collaboration with the Georgian National Museum. Available at: https://nationalgeographic.ge/story/georgia-the-cradle-of-viticulture/;
25. Maghradze, D., et al. (2016). Grape and wine culture in Georgia, the South Caucasus. 39th World Conference of Vine and Wine, BIO Web of Conferences 7 (03027);
26. Mercer, C. (2023, May 24). Which countries drink the most wine? Ask Decanter. Decanter. Available at: https://www.decanter.com/wine-news/which-countries-drink-the-most-wine-ask-decanter-456922/;
27. National Statistics Office of Georgia. (2021 & 2024). External trade portal. Available at: https://ex-trade.geostat.ge/en;
28. National Statistics Office of Georgia. (2024). Exports by commodity groups (HS 2 digit level) in 2015-2024. Export. Available at: https://www.geostat.ge/en/modules/categories/637/export;
29. National Statistics Office of Georgia. (2024). Inbound tourism statistics in Georgia. Available at: https://www.geostat.ge/media/59934/Inbound-Tourism-Statistics---%282023-year%29.pdf;
30. National Wine Agency of Georgia. (2024, February 9). Export of wine and alcoholic beverages;
31. Numbeo. (2024). Price rankings by country of bottle of wine (mid-range) (markets). Available at: https://www.numbeo.com/cost-of-living/country_price_rankings?itemId=14;
32. Quinn, C. (2020, April 1). The tourism industry is in trouble. Foreign Policy. Available at: https://foreignpolicy.com/2020/04/01/coronavirus-tourism-industry-worst-hit-countries-infographic/;
33. Rytkönen, P., Vigerland L., & Borg, E. (2021). Tales of Georgian wine: storytelling in the Georgian wine industry. Journal of Wine Research, 32(2);
34. Shamugia, E. (2023, October 17). Tourism: Georgia and the region. Forbes: Georgia. Available at: https://forbes.ge/en/tourism-georgia-and-the-region/;
35. Sharkov, D. (2016, March 3). Russian imports of Georgian wine skyrocket after ban is lifted. News-

week. Available at: https://www.newsweek.com/russian-imports-georgian-wine-skyrocket-after-lifted-ban-434698;

36. Smithsonian in Association with the National Parliamentary Library of Georgia. (2024). Prince Alexandre Chavchavadze (1786-1846). Chavchavadze Family;
37. State Department. (2019). 10th Anniversary Joint Declaration on the US – Georgia Strategic Partnership. Washington, DC;
38. Teliani Valley. (2024). Available at: https://www.telianivalley.com/en;
39. The Embassy of Georgia to the United States of America. (2021). High-level trade dialogue (HLTD). Available at: https://georgiaembassyusa.org/bilateral-trade/;
40. Tsereteli, M. (2018, December 7). Georgian wine and its narrative drive development. The Central Asia – Caucasus Analyst. Available at: https://www.cacianalyst.org/publications/analytical-articles/item/13548-georgian-wine-and-its-narrative-drive-development.html;
41. Tsereteli, M., Oliker, O., Mankoff, J. (2019, January). Wine, society, and geopolitics. Center for Strategic and International Studies. Available at: https://csis-website-prod.s3.amazonaws.com/s3fs-public/event/190307_Tsereteli_WineSociety_pageproofs5.pdf;
42. Tsinandali Estate Museum. (2024). Available at: http://tsinandali.ge/en/museum/about-us;
43. Transparency International, Georgia. (2023, February 23). Georgia's economic dependence on Russia: impact of the Russia-Ukraine war;
44. Transparency International, Georgia. (2024, February 16). Georgia's economic dependence on Russia: summary of 2023;
45. United States-Georgia Charter on Strategic Partnership. (2009, January 9). Washington, DC. Available at: https://www.state.gov/united-states-georgia-charter-on-strategic-partnership/;
46. USAID Agriculture Program. (2023). Unlocking potential for Georgian wine in US markets. Cultivating New Frontiers in Agriculture (CNFA);
47. USAID Economic Security Program. (2023, January 15). Quarterly report. Quarter 1 FY23: October – December 2022. Available at: https://pdf.usaid.gov/pdf_docs/PA02122H.pdf;
48. USAID/Georgia's Economic Security Program: Mid-Term Evaluation (2022, June). Final Report. Available at: https://pdf.usaid.gov/pdf_docs/PA00ZGXC.pdf;
49. Von Cramon-Taubadel, S. Saha, D. (2015, May). Short-run risks and long-run challenges for wine production in Georgia. Policy Paper Series, German Economic Team Georgia and ISET Policy Institute, Berlin/Tbilisi;
50. World Bank Group. (2012, February 22). Georgia – regional development project;
51. World Population Review. (2024). Wine producing countries 2024. Available at: https://worldpopulationreview.com/country-rankings/wine-producing-countries;
52. World's Best Vineyards. (2024). 47 Château Mukhrani, Mukhrani, Georgia;
53. Wines of Georgia. (2021). Beyond the niche: the past, present & future of Georgian wine in the US market. Available at: https://winesgeorgia.com/wp-content/uploads/2021/08/Georgia-301-Virtual-Seminar-26-Aug-2021.pdf;
54. Zivzivadze, L. Taktakishvili, T. (2019). Index-based analysis of Georgian wine export's competitiveness on a global market. International Journal of Agricultural Economics, 4(5). Available at: https://sciencepublishinggroup.com/article/10.11648/j.ijae.20190405.12.

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LABOUR MARKET OF GEORGIA: OVERVIEW AND ANTICIPATED EVOLUTION

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Abstract. This study examines the trends and developments in Georgia's labor market, with a primary focus on the period from 2013 to 2023. It is based on an analysis of current labor market conditions and relevant literature. The study identifies key drivers influencing the labor market, with particular emphasis on employers' expectations. Notably, expanding digital access and the adaptation to advanced technologies are recognized as significant factors impacting the labor market. Additionally, the study outlines the most in-demand skills for the future workforce, which include creative and analytical thinking, technological literacy, systems thinking, expertise in artificial intelligence (AI) and big data, as well as competencies related to management, leadership, and cybersecurity. In the process of shaping future labor market policies, special attention is given to the influence of technological factors on the nature and roles of future work. The paper references studies that substantiate the growing impact of artificial intelligence on labor market dynamics. The conclusion emphasizes the necessity for coordinated approaches and strategies between labor market institutions and the education system to enhance labor market conditions and address existing and future skill mismatches. It is recommended that active labor market policies be grounded in a detailed and systematic study of anticipated labor market developments.

KEYWORDS: FUTURE DEMANDS FOR SKILLS AND JOBS, HIGHER AND SELF-EMPLOYED, JOB CREATOR MACROTRENDS, EMPLOYMENT AND UNEMPLOYMENT, DRIVERS OF CHANGES.

INTRODUCTION

Reducing high unemployment rates and ensuring effective employment of the population requires the implementation of a comprehensive approach. To achieve these objectives, any policy, program, or project must involve a thorough study and analysis of the current state of the labor market. Furthermore, to ensure the desired outcomes, it is crucial to assess and forecast anticipated changes in the labor market.

Addressing issues related to unemployment and employment of the population is complicated by the fact that numerous factors influence the labor market. Labor markets in developing countries exhibit a unique dynamism, and Georgia is no exception. For over three decades, the labor market in Georgia has been characterized by high unemployment rates and ineffective employment strategies. A significant recent factor that has dramatically impacted Georgia's labor market is the COVID-19 pandemic. Although there have been some positive developments in reducing unemployment during the post-pandemic period, the labor market continues to face substantial challenges.

Alongside a detailed study of the current situation, attention must be given to economic, technological, local, and global factors that may either exacerbate existing problems in Georgia's labor market or, conversely, create new opportunities to improve labor market conditions. This is particularly relevant in the case of advanced technologies and digital work[1] platforms (Kvirkvaia, 2023). Therefore, it is crucial to conduct a comprehensive investigation into anticipated changes related to future skill requirements, labor market drivers, evolving workplace roles, strategies for preparing an adequate workforce, and other relevant factors.

METHODOLOGY

This study aims to analyze the current state of the labor market, with a focus on the factors influencing its dynamics and the directions of its changes. Utilizing the desk research method, the study draws upon official statistical data, publications from local and international organizations, and research conducted by both foreign and Georgian scholars. This comprehensive approach ensures an in-depth examination of the labor market dynamics and the various influences shaping its future. Additionally, the study incorporates findings from the report[2] on the development of skills forecasting in the labor market of Georgia, created in collaboration with Cambridge Econometrics and the Ministry of Economy and Sustainable Development of Georgia (MOESD) (Suta, et al., 2022). Special attention is given to the study results published by the World Economic Forum, which are related to ongoing processes in global labor markets.

At the end of the paper, the research findings are summarized, and key conclusions are presented. This research serves as a foundational basis for a comprehensive study to be conducted on the labor market in the future.

OVERVIEW OF THE LABOR MARKET IN GEORGIA

To analyze the current state of the labor market, the most critical indicators are the unemployment and employment rates of the working-age population. Monitoring changes over time is also essential to identify trends within the labor market. It should be noted that official data on workforce indicators is based on established methodologies and adheres to international labor statistics practices. The methodologies and standards employed by the country's official agency in workforce studies are of paramount importance, as modifications of these methodologies

1 Kvirkvaia, M. (2023). Digital work platforms in the modern labor market. In M. Kupiek & R. A. Brandmeier (eds.), The digital transformation of Georgia, pp. 3-22. Cham: Springer. Available at <https://doi.org/10.1007/978-3-031-2641-1_1>.

2 Suta, C.-M., Barbieri, L., Alexandri, E., Thoung, C., Barker, A. (2022). Development of a macroeconomic skills forecasting model for Georgia. Analysis of the labour market for the next 5 years. Cambridge Econometrics and the Ministry of Economy and Sustainable Development of Georgia (MOESD). Available at: <https://www.lmis.gov.ge/Lmis/Lmis.Portal.Web/Handlers/GetFile.ashx?Type=Content&ID=2a982367-58a7-4744-93a5-14294b1ec451> [Last access: 01.12.2025].

and standards can lead to significant variations in the reported indicators. A good example of this is the introduction of new standards by the International Labour Organization in Georgia in 2020, which were implemented by the National Statistics Office of Georgia (National Statistics Office of Georgia, 2025). This change led to notable alterations in workforce indicators. While the relevance of official statistical data warrants separate discussion, for this research, official statistical data, along with other materials, provide valuable insights into the current state of the labor market in Georgia. One particular useful set of statistical information is the official data on population and workforce indicators[3] for the last ten years (see Table 1).

Among workforce indicators, the most significant are the dynamics of unemployment and employment levels over the past 10 years. According to official data, the lowest unemployment rate recorded between 2014 and 2023 occurred in 2023, while the highest rate was observed in 2014. It is noteworthy that, according to official data, unemployment has been steadily decreasing since 2014, except during the COVID-19 pandemic period. During the reporting period, the absolute number of unemployed individuals decreased by 112,000, and preliminary official data for the first three quarters of 2024 indicate that the number of unemployed individuals has decreased even further. The unemployment rate varies significantly across age groups (see Figure 1). For instance, in 2023, the unemployment rate among young people aged 20 to 24 was notably high, reaching 32 percent, which is nearly double the overall unemployment rate for the country in the same year. Additionally, unemployment rates were also elevated among the 25-29 and 30-34 age groups, both exceeding 20 percent.

Unemployment and employment data categorized by educational attainment level can provide valuable insights into the labor market. Typically, these statistics illustrate how different levels of education influence job prospects and employ-

3 National Statistics Office of Georgia. (2025). Labour Force Indicators. Available at: <https://www.geostat.ge/en/modules/categories/683/Employment-Unemployment> [Last Access: 01.12.2025].

TABLE 1: POPULATION AND LABOUR FORCE INDICATORS *

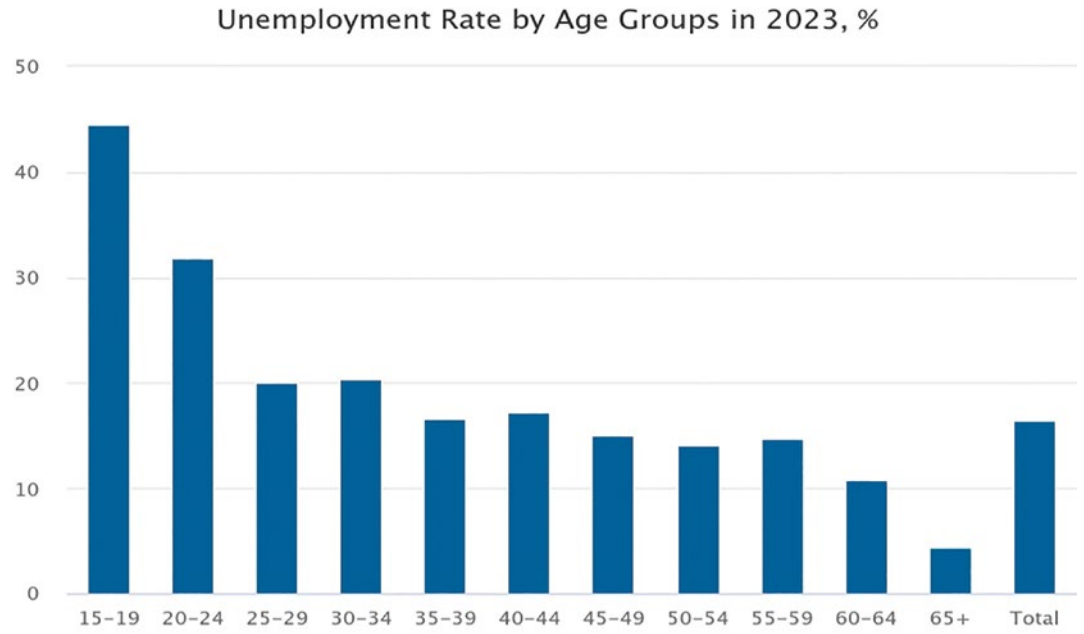
(thousand persons)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 -1Q	2024 -2Q	2024 -3Q
Unemployed	374.0	367.2	359.2	354.5	309.0	276.9	281.9	316.2	267.9	261.7	228.6	219.7	225.7
Unemployment (%)	23.0	21.9	21.7	21.6	19.2	17.6	18.5	20.6	17.3	16.4	14.0	13.7	13.8
Employed	1255.0	1308.5	1294.5	1286.9	1296.2	1295.9	1241.8	1217.4	1283.7	1334.6	1401.9	1387.8	1407.6
Employment (%)	41.4	43.3	43.0	42.7	42.7	42.7	41.1	40.4	42.9	44.5	-	-	-
Hired	795.5	855.3	853.9	869.3	903.5	897.5	845.3	829.4	870.9	920.4	-	-	-
Self-employed	453.0	445.6	434.4	416.8	392.2	397.9	395.9	387.1	412.1	413.6	-	-	-
Labor force	1629.0	1675.6	1653.8	1641.4	1605.2	1572.8	1523.7	1533.6	1551.6	1596.3	1630.5	1607.6	1633.4
Participation rate (%)	53.7	55.5	55.0	54.5	52.9	51.8	50.5	50.9	51.9	53.3	-	-	-
Outside the labor force	1402.6	1343.5	1355.7	1370.9	1429.0	1464.3	1494.8	1476.7	1437.4	1400.8	-	-	-
Population	3,716.9	3,721.9	3,728.6	3,726.4	3,729.6	3,723.5	3,716.9	3,728.6	3,688.6	3,736.4	-	-	-
Total 15 + population	3031.6	3019.1	3009.4	3012.3	3034.3	3037.1	3018.5	3010.3	2988.9	2997.1	-	-	-

Source: The table is compiled according to the data of the National Statistical Service of Georgia

* Table 1 presents some labour indicators for the first three quarters of 2024 only, published by the Office for National Statistics during the study period.

FIGURE 1



Source: *National Statistical Service of Georgia*

ment stability. Data from 2020-2023 indicate that the highest unemployment rate by educational attainment level is observed among individuals with Primary or Lower Secondary level, followed by those with Upper Secondary level. Next is Vocational education graduates, and the lowest unemployment rate is among individuals with Higher education.

According to official data, a positive correlation is confirmed between employment levels and educational attainment. From 2020 to 2023, it is evident that higher levels of education correspond to increased employment rates within the workforce.

Furthermore, employment levels among young people also vary by gender. For example, in 2023, the employment rate for graduates aged 20 to 34 was 54.8 percent. Within this group, the employment rate for women was 50.4 percent, whereas for men it was nearly 59 percent.

Over the past decade, the size of the workforce has remained relatively stable or has experienced a slight decline, with the participation rate being approximately 53 percent. During the same period, the number of individuals outside the labor force has also remained nearly constant. It can be assumed that the stagnation of both the labor force and those outside of it may be due to the low population growth rate and migration factors. Both phenomena are associated with numerous negative consequences for the population of Georgia.

A positive development is the increase in the number of employed individuals by approximately 80,000, primarily attributed to the rise in hired employees. However, the increase in the number of employees was mainly due to the growth in the public sector workforce, which does not guarantee long-term effective employment. This is confirmed by the data from the National Statistics Office of Georgia (2025) on the distribution of employment by ownership forms,[4] which indicates that employment across all sectors generally increased by approximately 12% from 2014 to 2023, including about 27% in the public sector, while in other sectors only by about 7%.

Despite a certain reduction, the number of self-employed people remains high (about 400 thousand). Likely, some of those self-employed individuals do not represent the actual employees or, at best, fall into the category of ineffective

4 National Statistics Office of Georgia. (2025). Labor Force Indicators. Available at: <https://www.geostat.ge/en/modules/categories/683/Employment-Unemployment> [Last Access: 01.12.2025].

employees[5] (Kvirkvaia & Shengelia, 2024). Overall, the inefficiency of employment in Georgia is also reflected in the distribution of employees by type of economic activity, where the largest share is comprised of those employed in agriculture.

Expected Changes in the Labor Market

In the context of globalization, the labor market of any country, including Georgia, evolves under the influence of international processes and changes. Therefore, to study the expected changes and development directions in the labor market, it is beneficial to consider the findings from research conducted at both international and national levels. In this regard, the fourth edition of the Future of Jobs[6] report, published by the World Economic Forum (2023), holds significant importance. This edition is based on a survey conducted across 45 countries, including Georgia. These countries' economies account for 88% of the global GDP. The research covered 27 industry clusters and 803 companies, employing over 11 million people in total. The survey includes questions about broad trends and technology developments, their impact on jobs and skills, and the strategies businesses plan to implement to transform their workforce. The results of the research are based on the expectations of the surveyed companies regarding future changes in the labor market.

Since the demand for labor is derived from the demand for a firm's output, changes in the labor market generally have a significant impact on businesses due to ongoing transformations. In terms of factors influencing business transformation, respondents in the Future of Jobs Report 2023 indicated that increased adoption of new and disruptive technologies, along with increased access to digital technologies, are likely to drive organizational change. These trends are expected to impact more than 86% of organizations surveyed. Among the factors driving changes within organizations, the broader application of Environmental, Social, and Governance (ESG) standards is also significant (80.6%). According to the respondents, the next most important trends in driving changes are macroeconomic trends, specifically the rising cost of living for consumers (74.9%) and slower global economic growth (73.0%).

The report presents the surveyed organizations' assessment of individual macrotrends as job creators over five years. According to their expectations, the highest percentage of respondents identifies the macrotrend of increased adoption of new and frontier technologies as the most significant job creator. However, a significant portion of respondents also classify the same macrotrend as a job displacer. Therefore, despite the positive net effect of the increased adoption of new and frontier technologies on job growth, more significant net job creators in the future are anticipated to be investments that facilitate the green transition of businesses, the broader application of ESG standards, and the localization of supply chains.

In the World Economic Forum report, respondents from Georgia exhibit somewhat different expectations regarding job creators compared to the global perspective. For example, according to respondents from Georgia, the positive net effect (job creator minus job displacer) of the macrotrend of broadening digital access is 60%, whereas globally, the same indicator is almost half at 33.7%. Such differing expectations may be due to a relative lag in the adoption of digital technologies in Georgia compared to other countries. Nevertheless, Georgian respondents anticipate an increase in the utilization of digital technologies in the future and consider it a significant influencing factor on the labor market.

The impact of technology on the labor market is particularly noteworthy among macrotrends, as understanding how technology impacts labor markets is critical for facilitating transitions from declining jobs to future employment opportunities. The majority of surveyed organizations (75% and more) anticipate the adoption of technologies such as digital platforms and apps, education and workforce development technologies, big-data analytics, cloud computing, encryption

5 Kvirkvyaia, M., Shengelia, M. (2024). Unemployment and Digital Labor Platforms in Georgia. European Scientific Journal, ESJ, 20(37), p. 126. Available at: <https://doi.org/10.19044/esj.2024.v20n37p126>.

6 World Economic Forum. (2023). Future of Jobs Report 2023. Available at: <https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf>. [Last Access: 01.05.2025].

and cybersecurity, e-commerce and digital trade, artificial intelligence, and so on by 2027.

In terms of the impact of technology on the labor market, particularly regarding job creation, the expectations for the next five years are almost identical both globally and in Georgia. Respondents from Georgia also consider e-commerce and digital trade, big-data analytics, distributed ledger technology (e.g., blockchain), encryption and cybersecurity, as well as digital platforms and apps, and so on, as significant job creators in the future.

Regarding the anticipated creation of new jobs in the labor market, forecasts for the demand for green jobs are significant. Specifically, according to a recent estimate by the International Energy Agency[7] (IEA), a green-recovery scenario could result in an additional 3.5% growth in global GDP, alongside a net employment impact of 9 million new jobs created each year. Globally, the green transition could create 30 million jobs in clean energy, efficiency, and low-emission technologies by 2030.

In order to adapt to future changes in the labor market, it is essential to identify the skills that will be increasingly in demand. More than half of the surveyed respondents recognize the basic skills whose importance is expected to rise between 2023-2027 (see table 3). Compared to the skills in demand in 2023, the importance of Creative and Analytical thinking will increase even more in the future.

When comparing the two fundamental skills, creative and analytical thinking, respondents indicate that the importance of creative thinking is expected to grow more significantly in the future than that of analytical thinking skills. Nevertheless, both skills rank at the top of the list of the most important competencies for

7 International Energy Agency. (2020). World Energy Outlook Special Report in collaboration with the International Monetary Fund. Available at: <https://iea.blob.core.windows.net/assets/c3de5e13-26e8-4e52-8a67-b97aba17f0a2/Sustainable_Recovery.pdf>.

TABLE 2: REQUIRED SKILLS (2023-2027)

SKILLS REQUIRED 2023 (TOP 15)	EXPECTED RISE OF REQUIRED SKILLS*
Analytical thinking	Creative thinking
Creative thinking	Analytical thinking
Resilience, flexibility and agility	Technological literacy
Motivation and self-awareness	Curiosity and lifelong learning
Curiosity and lifelong learning	Resilience, flexibility and agility
Technological literacy	Systems thinking
Dependability and attention to detail	AI and big data
Empathy and active listening	Motivation and self-awareness
Leadership and social influence	Talent management
Quality control	Service Orientation and customer service
Systems thinking	Leadership and social influence
Talent management	Empathy and active listening
Service Orientation and customer service	Dependability and attention to detail
Resource management and operations	Resource management and operations
AI and big data	Networks and cybersecurity

Authors elaboration. Source: World Economic Forum, Future of Jobs Survey 2023.

* Listed skills are ranked based on share of organizations surveyed which consider skills to be increasing in importance.

their respective periods. Additionally, respondents anticipate an increase in the importance of skills such as artificial intelligence (AI) and big data, systems thinking, technological literacy, curiosity and lifelong learning, motivation, and self-awareness, among others.

Forecasts regarding absolute job growth provide valuable insights. According to the Future of Jobs Report 2023, based on the study of 673 million employees using a global dataset of the International Labor Organization, the following forecasts are given regarding the absolute growth of jobs: Over the next five years (2023-2027), 69 million jobs will be created, and 83 million jobs will be lost. Thus, the study indicates a net loss of 14 million jobs, which constitutes 2% of the 673 million employees studied; According to the same study, the highest absolute job creation over the next five years is expected for Agricultural Equipment Operators, Heavy Truck and Bus Drivers, and Vocational Education Teachers. The greatest reduction in employment in absolute terms is expected for Data Entry Clerks, Administrative and Executive Secretaries, and Accounting, Bookkeeping, and Payroll Clerks.

To forecast changes in the labor market, it is crucial to comprehend the evolving division of tasks performed by humans compared to those executed by machines and algorithms. According to the Future of Jobs 2023 report, organizations currently estimate that machines perform over one-third of all business-related tasks, while humans handle the remaining nearly two-thirds. Employers anticipate that automation will exceed 40% by 2027. The survey indicates that by 2027, 35% of reasoning and decision-making tasks and 65% of information and data processing tasks will be automated. Furthermore, the study indicates that 44% of workers' skills are anticipated to become obsolete within the next five years, according to surveyed companies. Survey participants estimate that 60% of workers will require training by 2027. In response to these changes, companies plan to prioritize learning initiatives, on-the-job training, and process automation. Most companies expect to see a return on their investment in skills training within a year, whether through increased productivity, enhanced employee satisfaction, or greater role flexibility.

In addition to the findings of the World Economic Forum's research, numerous other papers and studies have highlighted the impact of technology on the labor market. Recent studies focusing on the short-term and long-term expectations regarding the impact of technologies, particularly artificial intelligence (AI), are particularly noteworthy. Regarding this, researchers (McRae et al., 2024) assert that "AI will create, not diminish, workforce opportunity". A 2023 Gartner survey found that 22% of employees expected AI to replace their job within the next five years. Despite this anxiety, it is anticipated that, in the short to medium term, generative AI (GenAI) will not replace many jobs; rather, it will lead to the redesign of jobs to include new responsibilities, such as interacting with GenAI tools. "Gartner predicts that GenAI will be involved in 70% of text – and data-heavy tasks by 2025, up from less than 10% in 2023".[8]

Furthermore, the International Labour Organization **(ILO, 2024)**[9] has placed significant emphasis on the impact of artificial intelligence on the labor market in its 2024 report. The report states, "Many countries, including developing ones, have adopted policies to encourage the adoption of AI. However, in the current climate of geopolitical tensions, technological transfer seems to be facing intensifying barriers, which will hamper leapfrogging strategies in developing countries to harness the benefits of these digital technologies".

Researchers from Georgia (Abuselidze & Mamaladze, 2021) have dedicated a paper to examining the impact of artificial intelligence on the labor market and employment. According to their conclusion, "Artificial Intelligence can promote economic growth, create new jobs and employment. The destruction mechanism is a replacement effect, where new technology will replace old technology, and hence, changing old technol-

8 McRae, E. R., Aykens, P., Lowmaster, K., Shepp, J. (2024). 9 trends that will shape work in 2024 and beyond. Harvard Business Review. Available at: <https://hbr.org/2024/01/9-trends-that-will-shape-work-in-2024-and-beyond> [Last Access: 01.12.2025].

9 International Labour Organization. (2024). World Employment and Social Outlook. Available at: <https://doi.org/10.54394/HQAE1085>.

ogy jobs will inevitably lead to unemployment. Technological advances will reduce costs and make resources more efficient".[10]

Alongside certain global trends, there are labor market drivers that are specific to particular countries or regions. For instance, a group of authors (Hodge et al., 2023)[11] asserts that "The US labor market has experienced significant changes since the turn of the century. Some of the most profound changes were driven by technology, others shaped by business, policy, and shifting social norms. Two enormous economic shocks, the Great Recession of 2007–2009 and the pandemic recession of 2020, also drove change in the economy and labor market. At the time of this writing, the Federal Reserve has been working to bring down inflation rates that reached a 40-year high last year. These major developments have transformed the nature of work and opportunities for American workers".

Based on the objectives of our research, among the recently published works and studies on the Georgian labor market, it is worth noting the report "Development of a Macroeconomic Skills Forecasting Model for Georgia" (Suta, et al., 2022). This report[12] was developed through a collaboration between the Ministry of Economy and Sustainable Development of Georgia and the international consulting company Cambridge Econometrics. Cambridge Econometrics was tasked with creating the skills forecasting model in close consultation with the National Bank and the National Statistics Office of Georgia. This document represents the first assessment of the future skills challenges facing the Georgian economy over the next five years (2022-2027). Based on the models developed within the framework of the work, a macroeconomic forecast is made in three key areas: the direction of labor demand (employment forecast by sector, occupation, and qualifications); the direction of labor supply (labor supply forecast by age, gender, and qualification); and replacement needs forecast by occupation. The models are constructed based on various assumptions. One such assumption is that by 2027, the working-age population (ages 15-64) will decrease by 12 thousand individuals. Under macroeconomic assumptions, starting in 2024, GDP growth is expected to remain stable at approximately 5% per year, with each major component of spending expected to grow at the same rate. According to this assumption, GDP is expected to increase by 30 percent by 2027 compared to 2022. Based on the sector growth estimates, the biggest sectors (for 2022-2027) are Agriculture, Manufacturing, Construction, Wholesale and Retail Trade, and Transport. Together, these five sectors are expected to account for nearly 60% of gross output.

Over the forecast period (2022-2027), employment in Georgia is projected to grow at an average annual rate of 1.3%. In absolute terms, this translates to an expected increase of approximately 10,000 workers per year. By 2027, employment in Georgia is forecasted to reach 1.36 million people, representing a 6.9% growth compared to 2022. Most sectors are anticipated to experience employment growth during this period, except for agriculture, which is expected to decline by over 11,000 workers. Declines are also expected in manufacturing. The employment decrease in Agriculture and Manufacturing can be attributed primarily to the robust growth in labor productivity within these sectors. Notably, the largest absolute increase in employment is expected in Public Administration and Defense, Transport and Storage, and Education. Additionally, smaller sectors like Mining and Quarrying and Activities of Households as Employers are expected to exhibit strong percentage growth.

The developed document contains critical information regarding the future labor market

10 Abuselidze, G., Mamaladze, L. (2021). The impact of artificial intelligence on employment before and during pandemic: A comparative analysis. J. Phys.: Conf. Ser. Available at: <https://iopscience.iop.org/article/10.1088/1742-6596/1840/1/012040>.

11 Hodge, N., Andreason, S., Van Horn, E. C. (2023). The labor market, then and now: The first two decades of the 21st century, part one. Available at: <https://doi.org/10.29338/wc2023-02>.

12 Suta, C.-M., Barbieri, L., Alexandri, E., Thoung, C., Barker, A. (2022). Development of a macroeconomic skills forecasting model for Georgia. Analysis of the labour market for the next 5 years. Cambridge Econometrics and the Ministry of Economy and Sustainable Development of Georgia (MOESD). Available at: <https://www.lmis.gov.ge/Lmis/Lmis.Portal.Web/Handlers/GetFile.ashx?Type=Content&ID=2a982367-58a7-4744-93a5-14294b1ec451> [Last Access: 01.12.2025].

FIGURE 2: JOB OPENINGS BY BROAD OCCUPATIONAL GROUP, 2022-27

Source(s): Cambridge Econometrics.

of Georgia, including anticipated job openings or vacancies. Two primary drivers of those directions are expansion demand* (resulting from changes in the size and structure of the economy); replacement demand (the need to replace people who may be leaving their current jobs). Forecasts of job openings are based on assumptions regarding changes in sectoral employment by occupation. Additionally, these forecasts consider trend analyses from countries similar to Georgia (such as Bulgaria and Romania), which have more readily available data, as well as expert estimates. The occupations considered are the nine ISCO 1-digit occupations (ILO, 2025).[13] According to the model developed in the report, in most occupations, replacement demand constitutes the majority of job openings. Overall, replacement demand and expansion demand are expected to account for 70% and 30% of job openings respectively (see figure 2). Productivity in the agriculture sector grows at a rate faster than output, the demand for Skilled Agricultural, Forestry, and Fishery Workers is expected to decrease, resulting in no anticipated job openings in that occupation. The occupations with the largest number of job openings coming from new jobs are Professionals and Service and sales workers, accounting for 25% and 21%, respectively, of total job openings. Furthermore, the *Professionals* category is where expansion demand accounts for the largest share of job openings (45%). The occupational structure of some sectors is kept unchanged due to a lack of evidence regarding potential future trends. As well as insufficient data on possible future trends (see Figure 2).

The paper outlines the expected labor supply based on age, gender, and qualification. It also compares labor demand by qualification to assess potential mismatches between skill supply and demand. Labor supply projections are based on population projections that do not consider any

* Expansion demand is calculated as employment in 2027 minus employment in 2022. Replacements is calculated as the total number of jobs where the person would need to be replaced over 2022-27. Total job openings is the sum between replacements and new/lost jobs.

13 International Labour Organization. (n.d.). International Standard Classification of Occupations (ISCO). Available at: <https://ilostat.ilo.org/methods/concepts-and-definitions/classification-occupation/> [Last Access: 01.12.2025].

changes in labor force participation rates (by age and sex) for the period from 2022 to 2027. Consequently, the projected changes in labor supply are attributed solely to demographic shifts. The total labor force is expected to decline by approximately 66,000 individuals (2.5%) over the period from 2022 to 2027.

The report compares the projected supply (labor force) and demand (employment) across various qualifications and illustrates the future supply available (i.e., supply minus demand). These forecasts indicate a potential shortage of highly* qualified workers in the medium term. Consequently, middle-skilled workers may occupy high-skilled positions, while low-skilled workers, whose supply is expected to increase-may occupy medium-skilled positions, potentially leading to a skills mismatch that can impact productivity.

CONCLUSIONS

Analysis of the existing statistical data on Georgia's labor market shows that the overall unemployment rate, particularly among youth age groups, is significantly higher than the natural rate of unemployment.

A positive development is that, according to official statistics, over the past 10 years, the number of employed individuals has increased, mainly due to a rise in the number of hired employees and a simultaneous decrease in the number of self-employed individuals. However, the number of self-employed individuals remains relatively high. Despite certain changes, the share of those employed in agriculture continues to be substantial. Regarding employment by sectors, over the past five years, the Georgian economy has experienced significantly higher percentage growth in the public sector compared to other sectors, which only provides a temporary alleviation of the unemployment problem.

Looking ahead, a shortage of highly qualified labor coupled with a surplus of low-qualified labor is expected to emerge alongside a reduction of the labor force. This situation will exacerbate existing mismatches in the future labor market.

In line with global processes, the primary factors influencing the development and changes in the Georgian labor market over the next five years will include expanding digital access, adaptation to modern advanced technologies, and projected economic growth. Additionally, other specific factors that will influence changes in Georgia's labor market in the future include negative demographic and migration trends, as well as the prospect of joining EU structures etc.

The Georgian labor market is expected to experience increased demand for the following skills: creative and analytical thinking, technological literacy, systems thinking, expertise in AI and big data, skills related to management, leadership, and cybersecurity.

In developing labor market policies and programs in Georgia, it is essential to pay special attention to technological factors, such as artificial intelligence, which will influence not only the structure of employment but also the functions and roles performed by individuals in the workplace in the future.

To ensure effective employment, the primary focus should shift from the public sector to fostering growth in the private sector, as the private sector is poised to play a crucial role in providing long-term, effective employment opportunities.

Studying and forecasting the future development of the labor market should be prioritized as a pressing issue in the country. The primary users of labor market forecasts should be educational institutions (higher, professional, secondary). These institutions must provide an adequate labor market supply that aligns with the forecasted demand in a timely manner.

Decision-makers at the public level should facilitate the alignment of skills demanded and supplied in the labor market. They should also support the study of future labor market development. This must be part of active labor market policy.

To address the current and projected mis-

* **High** – Doctor or equivalent; Master or equivalent; Bachelor or equivalent; Higher professional education or equivalent. **Medium** – Secondary general education (upper secondary); Vocational education on the base of secondary general education (except higher professional education); Vocational education without secondary general education. **Low** – Basic general education (lower secondary); Primary education; Pre-primary education; Has no education but can read and write; Illiterate.

matches in the labor market in Georgia, labor market institutions and the education system should respond with a unified strategy and action plans to consider both global and local factors influencing the evolution of the labor market.

To quickly adapt to changes in the labor market, private companies should develop a flexible system of on-site education and training, thereby reducing reliance on external sources of labor supply.

BIBLIOGRAPHY:

1. Cambridge Econometrics (Belgium). Available at: <https://www.camecon.us> [Last Access: 01.12.2025];
2. European Training Foundation. (2021). The future of work: New forms of employment in the Eastern Partnership countries: Platform work. Turin: ETF. Available at: <https://www.etf.europa.eu/sites/default/files/2021-07/future_of_work_platform_work_in_eap_countries.pdf> [Last Access: 01.12.2025];
3. European Commission, Directorate-General for Employment, Social Affairs and Inclusion. (2021). Digital labour platforms in the EU: Mapping and business models: Final report. Publications Office. Available at: <https://data.europa.eu/doi/10.2767/224624> [Last Access: 01.12.2025];
4. Gartner, Inc. Available at: <https://www.gartner.com>;
5. Hodge, N., Andreason, S., Van Horn, E. C. (2023). The labor market, then and now: The first two decades of the 21st century, part one. Available at: <https://doi.org/10.29338/wc2023-02>;
6. Howson, K., Ferrari, F., Salem, N., Johnston, H., Katta, S., Heeks, R., Graham, M. (2022). Driving the digital value network: Economic geographies of global platform capitalism. Global Networks, 22(4). Available at: <https://doi.org/10.1111/glob.12358>;
7. International Energy Agency. (2020). World Energy Outlook Special Report in collaboration with the International Monetary Fund. Available at: <https://iea.blob.core.windows.net/assets/c3de5e13-26e8-4e52-8a67-b97aba17f0a2/Sustainable_Recovery.pdf>;
8. International Labour Organization. (2024). World Employment and Social Outlook. Available at: <https://doi.org/10.54394/HQAE1085>;
9. International Labour Organization. (n.d.). International Standard Classification of Occupations (ISCO). Available at: <https://ilostat.ilo.org/methods/concepts-and-definitions/classification-occupation/> [Last Access: 01.12.2025];
10. Kvirkvaia, M. (2023). Digital work platforms in the modern labor market. In M. Kupiek & R. A. Brandmeier (eds.), The digital transformation of Georgia. Cham: Springer. Available at: <https://doi.org/10.1007/978-3-031-26451-1_1>;
11. Kvirkvaia, M., Shengelia, M. (2024). Unemployment and Digital Labor Platforms in Georgia. European Scientific Journal, ESJ, 20(37). Available at: <https://doi.org/10.19044/esj.2024.v20n37p126>;
12. Kvirkvaia, M., Kikutadze, V., Sikharulidze, D., Shaburishvili, S., Charaia, V. (2018). Study of factors affecting young people's professional orientation in Georgia. Globalization and Business, 3(6). Available at: <https://doi.org/10.35945/gb.2018.06.035>;
13. McRae, E. R., Aykens, P., Lowmaster, K., Shepp, J. (2024). 9 trends that will shape work in 2024 and beyond. Harvard Business Review. Available at: <https://hbr.org/2024/01/9-trends-that-will-shape-work-in-2024-and-beyond> [Last Access: 01.12.2025];
14. National Statistics Office of Georgia. (2025). Labour Force Indicators. Available at: <https://www.geostat.ge/en/modules/categories/683/Employment-Unemployment> [Last Access: 01.12.2025];
15. Suta, C.-M., Barbieri, L., Alexandri, E., Thoung, C., Barker, A. (2022). Development of a macroeconomic skills forecasting model for Georgia. Analysis of the labour market for the next 5 years. Cambridge Econometrics and the Ministry of Economy and Sustainable Development of Georgia. Available at: <https://www.lmis.gov.ge/Lmis/Lmis.Portal.Web/Handlers/GetFile.ashx?Type=Content&ID=2a982367-58a7-4744-93a5-14294b1ec451> [Last Access: 01.12.2025];
16. World Economic Forum. (2023). Future of Jobs Report 2023. Available at: <https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf> [Last Access: 01.05.2025].

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ARTICLE

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THE ROLE OF AI IN PERSONALIZING TRAVEL EXPERIENCES AND ENHANCING SATISFACTION AMONG ECO-CONSCIOUS TOURISTS IN ALGERIA

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Abstract. This study examines the impact of AI-Driven Personalisation on traveller satisfaction and eco-conscious behavior among Algerian tourists. Data was collected from 160 Algerian travellers through a survey to understand how AI influences their travel experiences and environmental awareness. The results show a significant positive relationship between AI-Driven Personalisation and both traveller satisfaction and eco-conscious behavior. Personalization enhances travellers' enjoyment by offering more relevant experiences and encourages more sustainable choices, such as eco-friendly accommodations and transportation. The study also identifies demographic factors that influence the effectiveness of AI personalization, including age and the use of specialized travel platforms. Younger travellers, who are more familiar with digital technologies, tend to benefit more from AI-driven recommendations compared to older tourists. These findings suggest that AI-Driven Personalisation can effectively promote sustainable tourism by improving traveller experiences and encouraging eco-friendly behaviors. Tourism providers can use AI to tailor suggestions to individual preferences, enhancing both the quality of the travel experience and the environmental impact. Future research should focus on the long-term effects of AI-Driven Personalisation, exploring its potential to shape future tourism trends and its broader impact on the industry.

KEYWORDS: AI-DRIVEN PERSONALISATION, ECO-CONSCIOUS BEHAVIOUR, TRAVELER SATISFACTION, ALGERIA.

INTRODUCTION

The tourism industry is one of the industry sectors affected by artificial intelligence.[1] This field is expected to transform various sectors and promoting both environmental sustainability and business success.[2]

According to the United Nations Environment Programme (UNEP) and the World Tourism Organization (WTO), sustainable tourism is the "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities".[3] Madjid et al. Emphasize that sustainable tourism requires a harmonious balance between environmental, economic, and social dimensions.[4] It also requires responsible behaviours from individuals.[5]

The International Ecotourism Society (TIES) considers ecotourism as responsible travel to natural areas that protects the environment, improves the well-being of local residents, including interpretation and education. Education is meant to be inclusive of both staff and guests.[6] Eco-tourism, also known as responsible tourism, attempts to limit negative effects on the environment, support local people, and encourage cultural preservation.[7] Both statements highlight responsible tourism, which aims to reduce environmental damage, help local people, and protect cultural heritage. Education and active engagement from all stakeholders are critical for developing sustainability and cultural awareness in tourist activities.

AI is rapidly being used across several service industries, such as travel and tourism, due to its great learning capacity, flexibility, and connectivity.[8]

Several studies have explored the potential of AI in the travel industry. For instance, Vecchia et al. Investigated the use of AI-powered recommendation systems (RSs) where one or more attractions must be recommended to users based on preferences, contextual aspects, and various other limitations in a sustainable way.[9] Their findings demonstrated the effectiveness of AI in matching travellers with eco-friendly recommended systems that align with their interests. Similarly, Milton (2024)[10] investigated the role of AI in improving energy usage and waste management in hotels, demonstrating the potential for AI-driven solutions for reducing the environmental effects of the tourist industry. AI-driven solutions for enhancing energy efficiency and waste management

1 Malik, S., Muhammad, K., Waheed, Y. (2024). Artificial intelligence and industrial applications – A revolution in modern industries. Ain Shams Engineering Journal, 15(9), 102886. Available at: <https://doi.org/10.1016/j.asej.2024.102886>.

2 Jorzik, P., Antonio, J. L., Kanbach, D. K., Kallmuenzer, A., Kraus, S. (2024). Sowing the seeds for sustainability: A business model innovation perspective on artificial intelligence in green technology startups. Technological Forecasting and Social Change, 208, 123653. Available at: <https://doi.org/10.1016/j.techfore.2024.123653>.

3 UNEP & WTO. (2005). Making Tourism more Sustainable (United Nations).

4 Majid, G. M., Tussyadiah, I., Kim, Y. R., Pal, A. (2023). Intelligent automation for sustainable tourism: A systematic review. Journal of Sustainable Tourism, 31(11), 2421– 2440. Available at: <https://doi.org/10.1080/09669582.2023.2246681>.

5 Chen, G., Peng, J. (2023). Promoting sustainable tourism destinations: Support and its role in tourist environmentally responsible behaviour. Environment, Development and Sustainability. Available at: <https://doi.org/10.1007/s10668-023-04095-y>.

6 TIES. (2015). What Is Ecotourism. The International Ecotourism Society. Available at: <https://ecotourism.org/what-is-ecotourism/>.

7 Kumar, P., Aggarwal, B., Kumar, V., Saini, H. (2024). Sustainable tourism progress: A 10-year bibliometric analysis. Cogent Social Sciences, 10(1), 2299614. Available at: <https://doi.org/10.1080/23311886.2023.2299614>.

8 Akter, S., Babu, M. M., Hani, U., Sultana, S., Bandara, R., Grant, D. (2024). Unleashing the power of artificial intelligence for climate action in industrial markets.

9 Dalla Vecchia, A., Migliorini, S., Quintarelli, E., Gambini, M., Belussi, A. (2024). Promoting sustainable tourism by recommending sequences of attractions with deep reinforcement learning. Information Technology & Tourism, 26(3), 449–484. Available at: <https://doi.org/10.1007/s40558-024-00288-x>.

10 Milton, D. T. (2024). Artificial Intelligence Transforming Hotel Gastronomy: An In-depth Review of AI-driven Innovations in Menu Design, Food Preparation, and Customer Interaction, with a Focus on Sustainability and Future Trends in the Hospitality Industry. International Journal for Multidimensional Research Perspectives, 2(3), Article 3. Available at: <https://doi.org/10.61877/ijmrp.v2i3.126>.

in hotels directly contribute to the aims of sustainable tourism. AI promotes resource efficiency and minimizes waste, which aligns with sustainability values. This promotes an eco-friendly tourist company by preserving natural resources and limiting tourism's negative environmental consequences, both of which are critical for the sector's long-term sustainability.

This study focuses on the use of AI-Driven Personalisation to improve the eco-conscious travel experience. The research will examine the possible benefits, challenges, and future trends of AI in this context. The main objective is to build a more sustainable and responsible tourism industry. Understanding AI's role in supporting sustainable tourism and increasing visitor pleasure allows us to build ways for delivering personalized experiences that are consistent with environmental values.

RESEARCH PROBLEMATIC

Based on the literature, we propose the following research question: How does AI-Driven Personalisation impact the satisfaction of the Algerian eco-conscious travellers? And if there is a significant impact, does this impact significantly vary across different demographic groups of Using Specialized platforms, Age, and Educational Level? Lastly, do the Daily green behaviours and public self-awareness moderate the relationship between AI-Driven Personalisation and traveller Eco-Consciousness Behaviour?

To investigate these questions, we propose our conceptual framework:

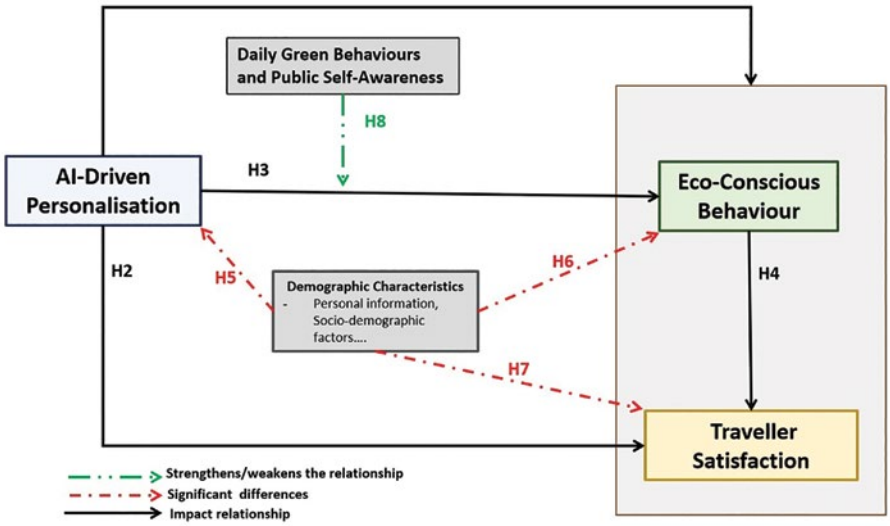
Conceptual framework

The main objective in the Figure 1 research is to examine the potential for AI-Driven Personalisation to improve environmentally conscious travel experiences. This includes looking into the benefits, limitations, ethical concerns, and practical uses of AI in this context. The study's focus is to provide a deep insight into how AI may be effectively utilized to promote sustainable tourism and develop customized experiences that are linked to traveller values and environmental objectives.

Literature review and hypothesis development

Understanding Eco-Conscious Travel: Eco-conscious travel, also known as green travel or eco-tourism, focuses specifically on the environmental sustainability of tourism within a desti-

FIGURE 1: CONCEPTUAL FRAMEWORK OF THE STUDY



Source: Proposed by the author

nation landscape.[11] Thus, Eco-conscious travel is a form of tourism that strives to minimize the negative environmental effects of travel. In other words, it is a conscious effort to travel and take into consideration to preserve natural resources, protect cultural heritage, and support sustainable development.

In their study by Sahabuddin et al. (2024),[12] they identify tourist satisfaction as a key factor influencing loyalty, environmentally responsible behaviour (ERB), and environmental commitment. The findings show that environmental value has a substantial effect on tourist satisfaction. Furthermore, visitor satisfaction is strongly correlated with tourist loyalty, ERB, and environmental commitment to the place or destination. Chen et al. (2023)[13] recommend that tourism destinations should maintain a conducive environment to develop tourist ERB, particularly when tourists exhibit a high level of public self-awareness. Previous studies have also shown that satisfactory AI services provide visitors with an exceptional trip experience and influence the benefits of tourism products.[14] In their study, Escobar-Farfán et al. (2024)[15] demonstrated that customers prefer brands relevant to their identity and enhance credibility and trust, favouring attitudes and behaviours that increase consumption. Travellers, like customers in general, like travel brands that reflect their character, values, and beliefs. When a brand shows relevance to a Traveller's eco-conscious values, it increases confidence and credibility. This connection generates good sentiments toward the brand, resulting in improved pleasure with the travel experience, as Travellers feel understood and valued, which can lead to repeat bookings and loyalty.

An Eco-conscious behaviour or Pro-environmental also known as the Eco-friendly tourist behaviour, happens when an individual tries to limit his/her negative effects on the natural environment and contribute to environmental conservation.[16] This behaviour is positively influenced by five emotions, as the **Kvasova** (2015) study found: extroversion, agreeableness, conscientiousness, neuroticism, openness. Other studies found that the Ecoconscious behaviour or Pro-environmental behaviour is positively influenced by situational factors such as tourism types or activities, personal emotions like awe and guilt, and individual motivation.[17] This individual motivation, as we supposed in our study it's the Daily Green Behaviours and Public Self-Awareness as a mediator variable (DGB&PSA); these are the main supposed as a bridge between environmental attitude and eco-friendly behaviour.

Studies investigated which generation is more widely known as the most eco-conscious generation, and they found that Generation Z is more accepting of eco-friendly travel.[18] In our study, we

11 Ozcan, B., Bozoklu, S., Khan, D. (2021). Tourism Sector and Environmental Quality: Evidence from Top 20 Tourist Destinations. In D. Balsalobre-Lorente, O. M. Driha, & M. Shahbaz (Eds.), Strategies in Sustainable Tourism, Economic Growth and Clean Energy. Springer International Publishing, 39–66. Available at: <https://doi.org/10.1007/978-3-030-596750_3>.

12 Sahabuddin, M., Alam, Md. S., Nekmahmud, Md. (2024). How do perceived and environmental values influence tourist satisfaction, loyalty, and environmental awareness? Environment, Development and Sustainability. Available at: <https://doi.org/10.1007/s10668-024-050943>.

13 Chen, G., Peng, J. (2023). Promoting sustainable tourism destinations: Support and its role in tourist environmentally responsible behaviour. Environment, Development and Sustainability. Available at: <https://doi.org/10.1007/s10668-023-04095-y>.

14 Ku, E. C. S., Chen, C.-D. (2024). Artificial intelligence innovation of tourism businesses: From satisfied tourists to continued service usage intention. International Journal of Information Management, 76, 102757, Available at: <https://doi.org/10.1016/j.ijinfomgt.2024.102757>.

15 Escobar-Farfán, M., Cervera-Taulet, A., Schlesinger, W. (2024). Destination brand identity: Challenges, opportunities, and future research agenda. Cogent Social Sciences, 10(1), 2302803. Available at: <https://doi.org/10.1080/23311886.2024.2302803>.

16 Kvasova, O. (2015). The Big Five personality traits as antecedents of eco-friendly tourist behavior. Personality and Individual Differences, 83, 111–116. Available at: <https://doi.org/10.1016/j.paid.2015.04.011>.

17 Su, L., Li, M., Wen, J., He, X.2024. How do tourism activities and induced awe affect tourists' pro-environmental behavior? Tourism Management, 106, 105002. Available at: <https://doi.org/10.1016/j.tourman.2024.105002>.

18 Ribeiro, M. A., Seyfi, S., Elhoushy, S., Woosnam, K. M., Patwardhan, V. (2023). Determinants of Generation Z pro-environmental travel behaviour: The moderating role of green consumption values. Journal of Sustainable Tourism. Scopus Available at: <https://

will focus on multiple generations from boomers to Generation Z, to know how age affects the eco-conscious behaviour of tourists. Also, the eco-friendly behaviour is affected positively by environmental and health concerns and service quality.[19]

Successful AI-Driven Personalisation Initiatives in Eco-Tourism:

- **Booking Platform (Netherlands 1996):** With more than 610.9 million visits to its website,[20] the platform takes into consideration factors such as energy efficiency, waste reduction, and local impact to identify eco-friendly options. In October 2023, Booking.com announced its new initiatives around Sustainability.[21] Booking.com has integrated AI into its platform to recommend sustainable accommodations based on traveller preferences and location. These initiatives enhance the travellers' experiences with AI-powered recommendations that help to find and book sustainable accommodations, contributing to increased demand for eco-friendly tourism.
- **UK-based Skyscanner (UK 2003):** this is a travel search engine that provides flights to hotels, and car hire and plan booking to many tourism destinations. Its main mission is to adopt the global transformation to modern and sustainable travel.[22] As a premier travel search platform with a 70 million monthly active user base and extensive global partnerships with about 1200 global partners. Skyscanner offers comprehensive flight data that closely aligns with booking trends.[23] Skyscanner has launched its app-exclusive Savvy Search tool, powered by OpenAI's Chat GPT technology, to provide travellers with an easier way to plan their customized trips.

Eco Tourism and AI status in Algeria: in the Strategic Tourism Development Plan (SDAT) 2025 for Algeria, this strategic plan aims to make tourism a pillar of the Algerian economy by capitalizing on the country's diverse assets (cultural, natural, historical) and developing tourism products tailored to the expectations of domestic and international markets.[24] It aims essentially to make tourism a driving force of economic growth for Algeria by developing both domestic and international tourism, preserving the environment and cultural heritage, and improving the country's international image.

Furthermore, with more than 2 million km^2 of surface and a rich relief made up of three major ensembles: the Tell in the north, the highlands and the Saharan Atlas in the centre, and the Sahara in the south.[25] Thus, ecotourism in Algeria offers a variety of activities, from exploring the Mediterranean coastline to venturing into the Saharan Atlas Mountains. Popular destinations include Tassili n'Ajjer National Park, Al Qal'a of Beni Hammad, Djémila, M'Zab Valley, Timgad, Tipasa, and Kasbah of Algiers, a UNESCO World Heritage Site known for its stunning historical and cultural places and diverse ecosystems.[26]

doi.org/10.1080/09669582.2023.2230389>.

19 Sadiq, M., Adil, M., Paul, J. (2022). Eco-friendly hotel stay and environmental attitude: A value-attitude-behaviour perspective. International Journal of Hospitality Management, 100, 103094. Available at: <https://doi.org/10.1016/j.ijhm.2021.103094>.

20 Statista. (2024, July 12). Booking.com: Total website visits worldwide 2024. Statista. Available at: <https://www.statista.com/statistics/1294912/total-visits-to-booking-website/>.

21 Booking.com Partners (Director). (2023, October 10). New & Next at Booking com [Video recording]. Available at: <https://www.youtube.com/watch?v=_Jsdc7mZHg8>.

22 Skyscanner. (2023, December 15). Our commitment to net zero. Available at: <https://www.skyscanner.net/media/sustainability/our-commitment-to-net-zero>.

23 ForwardKeys. (2018, June 19). Skyscanner and ForwardKeys join forces to reveal the future of regional travel behaviour. Available at: <https://forwardkeys.com/skyscannerand-forward-keys-join-forces-to-reveal-the-future-of-regional-travel-behaviour/>.

24 Mta.gov.dz. (2008). Le Schéma Directeur d'Aménagement Touristique 2030. Ministère de l'Aménagement du Territoire, de l'Environnement et du Tourisme. Available at: <https://www.mta.gov.dz/le-schema-directeur-damenagement-touristique-030/?lang=fr>.

25 Mta.gov.dz. (2023). Connaitre l'algerie. Available at: <https://www.mta.gov.dz/connaitrelalgerie/?lang=fr>.

26 UNESCO World Heritage centre. (n.d.). World Heritage List. UNESCO World Heritage Centre. Available

TABLE 1: RELIABILITY STATISTICS.

Dimension	Cronbach's Alpha	No. of Items	No of questionnaires
Scale all variables	0.916	18	160
DB_PS	0.680	4	
AIDriven_Personalization	0.797	3	
EcoConscious_Behaviour	0.795	5	
Traveller_Satisfaction	0.876	6	

Source: Author's explanation

MATERIAL AND METHODOLOGY

This study uses a quantitative research methodology to investigate and analyse the relationship between AI-Driven Personalisation and satisfaction among the Eco-Conscious Travellers in Algeria.

A structured questionnaire was developed to collect data from tourists who have visited the different tourism destinations. The questionnaire included items measuring AI-Driven Personalisation (e.g., Destination Recommendations, Accommodation Recommendations, Activity Recommendations, etc.), Eco-Conscious Behaviour and Satisfaction of the travellers (e.g., Sustainable Travel Choices, Environmental Awareness, Responsible Consumption, etc.), and sociodemographic information (e.g., age, gender, monthly income).

A convenience sampling method was used to recruit participants from tourists visiting the destination. A total of 160 respondents completed the survey and are ready to analysis.

The target population for this study consists of Algerian tourists who have travelled inside and outside the country in the past 6 months. A convenience sampling method will be used to recruit participants from various regions across Algeria.

Timeframe: The survey was open for replies from 12th August 2024 to 13th September 2024, which provided enough time for data collection.

To investigate the relationships between the study variables, the obtained data were analysed using descriptive statistics and inferential statistics using SPSS Statistics 26.

Firstly, we have to calculate and analyse the Cronbach's Alpha. This is a measure of internal consistency; how closely related a number of items are as a group.[27] The coefficient has a range of 0 to 1. When an item's alpha value is high, it suggests that it measures an underlying factor. That is a reliability/consistency test, not a statistical test, though. For our study, we found the results mentioned in **Table 1**.

The reliability test refers to the consistency and accuracy of measurement. In this case, Cronbach's alpha is used as a measure of internal consistency, indicating how well the items within each scale measure the same underlying construct Almquist et al., (2020). Therefore, the provided reliability statistics (Cronbach's alpha over 0.60) in Table 1 indicate that the scales used to measure these constructs are generally reliable and provide a solid foundation for further analysis and interpretation of the research findings.

Findings and Discussion: This part of the study included the results of the questionnaire forms distributed on the internet on Facebook, online Google Drive, email, and phone calls. To find out what the tourists' satisfaction is regarding the role of AI-Driven Personalisation as a factor to enhance the EcoConsciousness of Algerian travellers.

Respondent's Demographics: The given data comprises 160 respondents' demographic details. Table 2 provides a breakdown of the demographic and career characteristics of the respondents (n=160) involved in the study.

From the table above, the majority of re-

at: <https://whc.unesco.org/en/list/> (Last access: 16.09.2024).

27 Almquist, Y. B., Signild K., Brännström, L. (2020). A practical guide to quantitative methods with SPSS. 3787995 Bytes. Available at: <https://doi.org/10.17045/STHLMUNI.10321829>.

TABLE 2: THE RESPONDENTS ACCORDING TO DEMOGRAPHIC AND CAREER DATA (N =160)

	CLASS	FREQUENCY	PERCENT
Destination	Outside the country	67	41,9
Gender	More than 55	15	9,4
	Male	67	41,9
	Female	93	58,1
EducationLevel	High School	43	26,9
	University Level	78	48,8
	Doctoral Degree	39	24,4
IncomeLevel	Less than 20,000	31	19,4
	21,000-35,000	27	16,9
	36,000-45,000	17	10,6
	46,000-55,000	30	18,8
	More than 56,000	55	34,4
Occupation	Student	16	10,0
	Employed part-time	14	8,8
	Employed full-time	63	39,4
	Selfemployed	37	23,1
	Other	30	18,8
AiUsing	No	133	83,1
	Yes	27	16,9
Type	Inside the country	93	58,1
Age	18-24	45	28,1
	25-34	17	10,6
	35-44	62	38,8
	45-54	21	13,1

Source: Author's explanation

spondents (58.1%) chose to travel within the country, while 41.9% travelled outside Algeria. The largest age group was 35-44 (38.8%), followed by 18-24 (28.1%). The sample was relatively balanced, with 41.9% male and 58.1% female respondents. A significant portion (48.8%) had a university-level education, followed by doctoral degrees (24.4%) and high school (26.9%). The most common income bracket was "more than 56,000" (34.4%), indicating a relatively high-income sample. The largest occupational group was "employed full-time" (39.4%), followed by self-employed (23.1%). A smaller proportion of respondents (16.9%) reported using specialized apps integrated with AI in their travels, while the majority (83.1%) did not; they use their recommendations from notifications generated based on their research.

Descriptive statistics of factors

The provided descriptive statistics we get from SPSS calculations summarize the responses to the questionnaire items across four dimensions: Daily green behaviours and public self-awareness, AI-Driven Personalisation, Eco-Conscious Behaviour, and Traveller Satisfaction. The statistics include the number of valid responses (N), mean values, and standard deviation for each item (see Table 3).

Table 3 presents the results of a survey measuring traveller satisfaction and eco-conscious behaviour concerning AI-Driven Personalisation. The data is based on responses from 160 participants.

The results in **Table 4**, the mean values for all variables are relatively high, suggesting generally positive perceptions. And the standard deviation for all variables is moderate, indicating some

TABLE 3: MEASURING THE TRAVELLER SATISFACTION AND ECO-CONSCIOUSNESS BEHAVIOUR REGARDING THE USE OF AI-DRIVEN PERSONALISATION

N	Mean		Std. Deviation
1- Daily green behaviours and public self-awareness			
Q01: I always participate in green activities (gardening, recycling, homemade resources...etc.).	160	4,0313	0,95445
Q02: I talk to my friends about environmental issues	160	4,0000	0,93835
Q03: In my daily life, I prefer to use renewable energy sources (solar energy, biofuels. etc.)	160	3,9375	0,90204
Q04: I am highly aware about my own image while visiting at my tourism destination	160	4,4375	0,79057
2- AI-Driven Personalisation			
Q05: I am satisfied with the services AI recommendations provide me	160	3,9375	0,79057
Q06: I received relevant AI personalization to my eco-friendly preferences	160	4,0000	0,75235
Q07: AI-powered features facilitated my eco-friendly travel options	160	4,0938	0,80718
3- Eco-Conscious Behaviour			
Q08: I am considerate of and preserve the environment at the destinations I visit	160	4,5938	0,60705
Q09: I will talk about the environmental protection concerns of the destination with my travel companions	160	4,3438	0,99082
Q10: I consistently encourage my family and fellow travellers to embrace environmentally friendly practices	160	4,4375	0,86648
Q11: As a tourist, I avoid buying goods with unnecessary packaging material	160	4,0313	0,95445
Q12: As a tourist, I choose transportation that is most eco-friendly	160	4,0625	0,79057
4- Traveller Satisfaction			
Q13: I believe that my travel choices have positively affected the environment	160	3,9375	0,79057
Q14: I would recommend my travel destination or provider to others	160	3,9063	0,76723
Q15: Overall, I am satisfied with my travel experience	160	4,2500	0,75235
Q16: The AI-Driven Personalisation significantly enhanced my satisfaction with the trip	160	3,8125	0,84814
Q17: I would recommend this travel experience to other eco-conscious tourists	160	3,9688	0,88610
Q18: I'm preferred to utilize AI-powered customisation on future eco-friendly travels	160	4,2500	1,00314

Source: Author's explanation

TABLE 4: DESCRIPTIVE ANALYSIS OF THE RESPONDENTS' OPINIONS ACCORDING TO THE IMPACT OF AI-DRIVEN PERSONALISATION AS FACTOR IMPACT TRAVELLER SATISFACTION AND ECO-CONSCIOUSNESS BEHAVIOUR

	N	Mean	Std. Deviation	Rank
AIDriven_Personalization	160	4,0104	0,66079	**5**
DB_PS	160	4,1016	0,64201	**3**
EcoConscious_Behaviour	160	4,2938	0,63242	**1**
Traveller_Satisfaction	160	4,0208	0,66450	**4**
Scale_All_Variables	160	4,1128	0,54630	**2**
Valid N (listwise)	160			

Source: Author's explanation

variability in responses. Results also indicate that Eco-Conscious Behaviour is ranked highest, meaning that participants perceive it as having the greatest impact. And unlike Eco-Conscious Behaviour, AI-Driven Personalisation is ranked lowest, indicating a perceived lesser impact.

Based on these results, we conclude that Eco-Conscious Behaviour is a crucial factor influencing traveller satisfaction. This highlights the importance of incorporating sustainability into travel experiences. On the other hand, while AI-Driven Personalisation is ranked lower, it still has a positive impact on traveller satisfaction. This suggests that personalized experiences can contribute to a more enjoyable trip, even if they are not the primary driver of satisfaction. Finally, the scale All Variables ranking suggests that the combination of all factors, including AI-Driven Personalisation, destination-based preferences, eco-conscious behaviour, and traveller satisfaction, has a significant impact on the overall travel experience.

Hypotheses of the study test

Hypothesis 1: There is a significant positive relationship between AI-Driven Personalisation and traveller Satisfaction and Eco-Consciousness Behaviour.

Table 5 provides correlation coefficients between the main variables of the study: AI-Driven Personalisation, Eco-Conscious Behaviour, Traveller Satisfaction, and Scale All Variables. These coefficients indicate the strength and direction of the relationships between these variables.

Results found that A strong positive correlation of **0.831** exists between these two variables, supporting **Hypothesis 1.** This suggests that AI-Driven Personalisation is significantly associated with higher levels of traveller satisfaction. There is also a moderately strong positive correlation of **0.494** between AI-Driven Personalisation and Eco-Conscious Behaviour, further supporting **Hypothesis 1.** This indicates that personalized experiences can positively influence travellers' eco-conscious behaviour. Also, we found a significant positive correlation of **0.669** observed between these two variables, suggesting that engaging in EcoConscious Behaviour can enhance traveller satisfaction.

Overall, the results in **Table 5** strongly support Hypothesis 1. "There is a significant positive relationship between AI-Driven Personalisation and traveller Satisfaction and EcoConsciousness Behaviour".

Hypothesis 2: Higher levels of AI-Driven Personalisation have a significant impact on traveller Satisfaction.

TABLE 5: THE RELATIONSHIPS BETWEEN THE MAIN VARIABLES OF THE STUDY

		AIDriven_Personalization	EcoConscious_Behaviour	Traveller_Satisfaction	Scale_All_Variables
AIDriven_Personalization	Pearson Correlation	1	,494**	,831**	,873**
	Sig. (2-tailed)		0,000	0,000	0,000
	N	160	160	160	160
EcoConscious_Behaviour	Pearson Correlation	,494**	1	,669**	,806**
	Sig. (2-tailed)	0,000		0,000	0,000
	N	160	160	160	160
Traveller_Satisfaction	Pearson Correlation	,831**	,669**	1	,918**
	Sig. (2-tailed)	0,000	0,000		0,000
	N	160	160	160	160

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

Source: Author's explanation

Table 6: ANOVA Table

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48,489	1	48,489	352,728	,000[b]
	Residual	21,720	158	0,137		
	Total	70,208	159			

a. Dependent Variable: Traveller_Satisfaction

b. Predictors: (Constant), AIDriven_Personalization

Source: Author's explanation

Table 6 presents the results of an ANOVA (Analysis of Variance) test, which is used to determine whether there are significant differences between groups or models. In this case, the ANOVA is examining the relationship between AI-Driven Personalisation and Traveller Satisfaction.

The ANOVA results in **Table 6** provide strong evidence that AI-Driven Personalisation is a significant predictor of Traveller Satisfaction. The large F-statistic and highly significant p-value confirm that the model (including AI-Driven Personalisation) explains a significant amount of the variation in Traveller Satisfaction. This supports the findings from previous analyses and reinforces the importance of AI-Driven Personalisation in enhancing traveller experiences.

Table 7 presents the coefficients for the regression model predicting Traveller Satisfaction based on AI-Driven Personalisation. These coefficients represent the standardized beta weights

Table 7: Table of Coefficients

Model				Standardized Coefficients Beta	t	Sig.
1	(Constant)	0,669	0,181		3,701	0,000
	AIDriven_Personalization	0,836	0,044	0,831	18,781	0,000

a. Dependent Variable: Traveller_Satisfaction

Source: Author's explanation

Table 8: Model summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15,537	1	15,537	51,084	,000[b]
	Residual	48,056	158	0,304		
	Total	63,594	159			

a. Dependent Variable: EcoConscious_Behaviour

b. Predictors: (Constant), AIDriven_Personalization

Source: Author's explanation

Table 9: Table of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	2,397	0,269		8,909	0,000
	AI Driven_PERSONALIZATION	0,473	0,0660,494		7,147	0,000

a. Dependent Variable: EcoConscious_Behaviour

Source: Author's explanation

and their associated t-statistics and significance levels.

The results provide a standardized beta coefficient of **0.836** for AI-Driven Personalisation is relatively high, suggesting a strong positive relationship with Traveller Satisfaction. And, the t-statistic of **18,781** is extremely large, indicating that AI-Driven Personalisation is a highly significant predictor of Traveller Satisfaction. In conclusion, the results in **Table 7** provide strong evidence that AI-Driven Personalisation is a significant and influential predictor of Traveller Satisfaction. The high beta coefficient and significant t-statistic demonstrate the substantial impact of personalized experiences on enhancing traveller satisfaction.

Finally, the results from **Table 6**, and **Table 7** consistently indicate a strong positive relationship between AI-Driven Personalisation and Traveller Satisfaction. The high correlation coefficient, significant F-statistic, and significant beta coefficient all point to the conclusion that higher levels of AI-Driven Personalisation are indeed significantly associated with increased traveller satisfaction. And, the hypothesis

Hypothesis 2: Higher levels of AIDriven personalization significantly impact traveller Satisfaction" is supported.

Hypothesis 3: Higher levels of AI-Driven Personalisation have a significant impact on Tourist Eco-Consciousness Behaviour

Table 8 presents the model summary for a regression analysis where AI-Driven Personalisation is the predictor variable and Eco-Conscious Behavior is the outcome variable.

Results shown in **Table 8** provide strong evidence that AI-Driven Personalisation is a significant predictor of Eco-Conscious Behaviour. The large F-statistic and highly significant p-value confirm that the model (including AI-Driven Personalisation) explains a significant amount of the variation in Eco-Conscious Behaviour. This suggests that personalized experiences can play a role in influencing travellers' eco-conscious behaviour.

Table 9 presents the coefficients for the regression model predicting EcoConscious_Behaviour based on AI-Driven Personalisation. These coefficients represent the unstandardized and standardized beta weights, along with their associated t-statistics and significance levels.

The coefficient of **0.473** indicates that for every one-unit increase in AI-Driven Personalisation, Eco-Conscious Behaviour increases by **0.473** units, holding other variables constant. And, the t-statistic of **7.147** is significantly large, indicating that AI-Driven Personalisation is a highly significant predictor of Eco-Conscious Behaviour, with the p-value of **0.000** being significantly less than **0.05**, confirming the significance of AI-Driven Personalisation as a predictor. Hence, the results in **Table 9** provide strong evidence that AIDriven Personalization is a significant and influential predictor of Eco-Conscious Behaviour.

The positive coefficient and significant t-statistic demonstrate that personalized experiences can effectively encourage travellers to adopt more Eco-Conscious Behaviours.

Finally, based on the results from **Table 8** and **Table 9, Hypothesis 3**: Higher levels of AI-Driven Personalisation significantly impact Tourist Eco-Consciousness Behaviour **is supported.**

Hypothesis 4: Higher levels of Eco-Consciousness Behaviour personalisation have a significant impact on Traveller Satisfaction.

Table 10 presents the coefficients for a regression model predicting Traveler Satisfaction

Table 10: Table of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,004	0,270		3,721	0,000
	EcoConscious_Behaviour	0,703	0,062	0,669	11,307	0,000

a. Dependent Variable: Traveller_Satisfaction

Source: Author's explanation

Table 11: The One-Way ANOVA with AI-Driven Personalisation

AIDriven_Personalization: Using Specialized platforms groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7,208	1	7,208	18,303	0,000
Within Groups	62,219	158	0,394		
Total	69,427	159			

AIDriven_Personalization: Age groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11,385	4	2,846	7,601	0,000
Within Groups	58,042	155	0,374		
Total	69,427	159			

AIDriven_Personalization: Educational Level

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0,255	2	0,127	0,289	0,749
Within Groups	69,172	157	0,441		
Total	69,427	159			

Source: Author's explanation

using Eco-Conscious Behaviour as the predictor variable. The coefficient of **0.703** indicates that for every one-unit increase in Eco-Conscious Behaviour, Traveler Satisfaction increases by **0.703** units, holding other variables constant. The beta coefficient of **0.669** suggests a moderately strong positive relationship between Eco-Conscious Behaviour and Traveler Satisfaction. The t-statistic of **11.307** is significantly large, indicating that Eco-Conscious Behaviour is a highly significant predictor of Traveler Satisfaction. While the p-value of **0.000** is significantly less than 0.05, confirming the significance of EcoConscious_Behaviour as a predictor

The results in **Table 10** provide strong evidence that Eco-Conscious Behaviour is a significant and influential predictor of Traveler Satisfaction. The positive coefficient and significant t-statistic demonstrate that engaging in eco-conscious behaviour can significantly enhance the overall travel experience.

Table 10 presents the coefficients for a regression model predicting Traveler Satisfaction using Eco-Conscious Behaviour as the predictor variable. The coefficient of **0.703** indicates that for every one-unit increase in Eco-Conscious Behaviour, Traveler Satisfaction increases by **0.703** units, holding other variables constant. The t-statistic of **11.307** is significantly large, indicating that Eco-Conscious Behaviour is a highly significant predictor of Traveler Satisfaction. And, the p-value of **0.000** is significantly less than **0.05**, confirming the significance of EcoConscious_Behaviour as a predictor.

The results in **Table 10** provide strong evidence that Eco-Conscious Behaviour is a significant and influential predictor of Traveler Satisfaction. The positive coefficient and significant t-statistic demonstrate that engaging in eco-conscious behaviour can significantly enhance the overall travel experience.

Therefore, the hypothesis "**Hypothesis 4:** High-

Table 12: The One-Way ANOVA with Eco-Conscious Behaviour variable

EcoConscious_Behaviour : Age groups					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	19,564	4	4,891	17,218	0,000
Within Groups	44,030	155	0,284		
Total	63,594	159			
EcoConscious_Behaviour : Educational Level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,899	2	3,450	9,553	0,000
Within Groups	56,694	157	0,361		
Total	63,594	159			
EcoConscious_Behaviour : Gender groups					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,301	1	1,301	3,301	0,071
Within Groups	62,292	158	0,394		
Total	63,594	159			

Source: Author's explanation

er levels of Eco-Consciousness Behaviour significantly impact Traveler Satisfaction" can be supported based on the provided results.

Hypothesis 5: The impact of AI-Driven Personalisation significantly varies across different demographic groups of Using Specialized platforms, Age, and Educational Level.

Table 11 presents the results of one-way ANOVAs to examine whether the impact of AIDriven Personalization varies across different demographic groups: Using Specialized Platforms, Age, and Educational Level.

The F-statistic is **18,303** with a p-value of **0.000**, indicating a significant difference in the impact of AI-Driven Personalisation across different groups using specialized platforms. The F-statistic is **7,601** with a p-value of **0.000**, suggesting a significant difference in the impact of AI-Driven Personalisation across different age groups. Also, the F-statistic is **0.289** with a p-value of **0.749**. This indicates that there is no significant difference in the impact of AIDriven Personalization across different educational levels.

Accordingly, and based on the results, **Hypothesis 5 is partially supported**. The impact of AI-Driven Personalisation **significantly varies** across different groups using specialized platforms and different age groups, but **does not vary** significantly across different educational levels.

Hypothesis 6: The impact of Eco-Consciousness significantly varies across different demographic groups of Age, Educational Level, and Gender.

Table 12 presents the results of one-way

Table 13: The One-Way ANOVA with Traveller Satisfaction variable

Traveller_Satisfaction : Age groups					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16,809	4	4,202	12,198	0,000
Within Groups	53,399	155	0,345		
Total	70,208	159			
Traveller_Satisfaction : Educational Level groups					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0,233	2	0,117	0,262	0,770
Within Groups	69,975	157	0,446		
Total	70,208	159			
Traveller_Satisfaction : Gender groups					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,709	1	2,709	6,341	0,013
Within Groups	67,500	158	0,427		
Total	70,208	159			

Source: Author's explanation

Table 14: Table of coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,234	0,299		7,460	0,000
	AIDriven_Personalization	0,376	0,088	0,392	4,273	0,000
	DB_PS	0,149	0,091	0,152	1,637	0,104
	moderator	-0,087	0,040	-0,150	-2,192	0,030

a. Dependent Variable: EcoConscious_Behaviour

Source: Author's explanation

ANOVAs to examine whether the impact of Eco-Conscious Behaviour varies across different demographic groups: Age, Educational Level, and Gender. The F-statistic is **17,218** with a p-value of **0.000**, indicating a significant difference in the impact of Eco-Conscious Behaviour across different age groups. The F-statistic is **9,553** with a p-value of **0.000**, suggesting a significant difference in the impact of Eco-Conscious Behaviour across different educational levels. The F-statistic is **3,301** with a p-value of **0.071**. While this is marginally significant, it suggests a possible trend towards a difference in the impact of Eco-Conscious Behaviour across different gender groups.

Based on the results, **Hypothesis 6 is partially supported**. The impact of Eco-Conscious Behaviour **significantly varies** across different **age groups** and **educational levels**, but there is only **marginal evidence** for a difference across **gender groups**.

Hypothesis 7: The impact of Traveller Satisfaction significantly varies across different demographic groups of Age, Educational Level, and Gender.

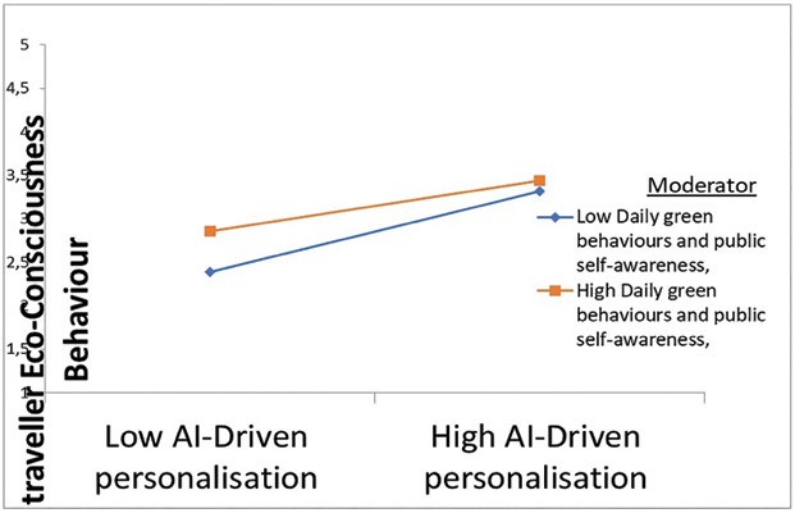
Table 13 presents the results of one-way ANOVAs to examine whether the impact of Traveler Satisfaction varies across different demographic groups: Age, Educational Level, and Gender. The F-statistic is **12,198** with a p-value of **0.000**, indicating a significant difference in the impact of Traveler Satisfaction across different age groups. The F-statistic is **0.262** with a p-value of **0.770**, suggesting **no significant difference** in the impact of Traveler Satisfaction across different educational levels. The F-statistic is **6,341** with a p-value of **0.013**, indicating a **significant difference** in the impact of Traveler Satisfaction across different gender groups.

Consequently, **Hypothesis 7** is partially supported. The impact of Traveler Satisfaction significantly varies across different age groups and gender groups, but does not vary significantly across different educational levels.

Hypothesis 8: The Daily green behaviours and public self-awareness will moderate the relationship between AI-Driven Personalisation and traveller Eco-Consciousness Behaviour.

Table 14 presents the coefficients for a regression model predicting Eco-Conscious Behaviour, including AI-Driven Personalisation, DB_PS (a construct related to destination-based preferences and services), and their interaction term as predictors. The standardized beta coefficient of **0.392** for AI-Driven Personalisation is positive and significant, suggesting a direct positive relationship with Eco-Conscious Behaviour. The standardized beta coefficient of **0.152** for DB_PS is positive but not significant, indicating that while it has

FIGURE 2: INTERACTIONS BETWEEN AI-DRIVEN PERSONALISATION, DAILY GREEN BEHAVIOURS, AND PUBLIC SELF-AWARENESS.



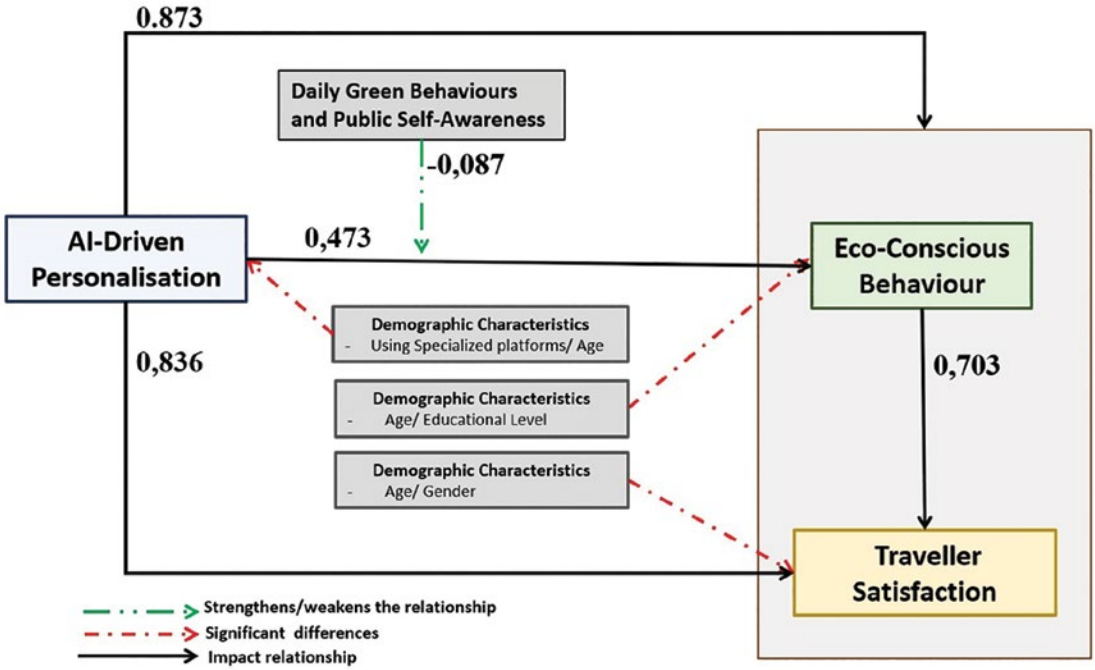
Source: Slope visual analysis is generated using James Gaskin's Excel StatTool (StatWiki, 2024)

some influence on Eco-Conscious Behaviour, it's not a strong predictor. Furthermore, the standardized beta coefficient of **– 0.150** for the interaction term (AI-Driven Personalisation * DB_PS) is negative and significant. This suggests that the relationship between AI-Driven Personalisation and Eco-Conscious Behaviour is moderated by DB_PS.

Then**, Hypothesis 8** is supported. The results indicate that the relationship between AIDriven Personalization and Eco-Conscious Behaviour is indeed moderated by DB_PS. Specifically, the positive impact of AI-Driven Personalisation on Eco-Conscious Behaviour is likely to be stronger when DB_PS is lower.

Hypothesis 8 is supported. The results indicate that the relationship between AI-Driven

FIGURE 3: FINAL CONCEPTUAL FRAMEWORK.



Source: The author based on SPSS results

Personalisation and Eco-Conscious Behaviour is indeed moderated by DB_PS. Specifically, the positive impact of AI-Driven Personalisation on Eco-Conscious Behaviour is likely to be stronger when DB_PS is lower.

The moderation plot shown in **Figure 2** confirms that Daily Green Behaviours and Public Self-Awareness indeed moderate the relationship between AI-Driven Personalisation and Traveler Eco-Consciousness Behaviour. This suggests that the effectiveness of AI-Driven Personalisation in promoting eco-conscious behaviour may depend on the individual traveller's existing level of environmental awareness and engagement.

CONCLUSION

This study aimed to investigate the impact of AI-Driven Personalisation on Traveler Satisfaction and Eco-Conscious Behaviour among Algerian travellers. Through a comprehensive analysis of survey data, several key findings have emerged.

AI-Driven Personalisation and Traveler Satisfaction: Research indicates that AI-Driven Personalisation has a significant positive impact on traveller satisfaction. This indicates that personalized experiences enhance the overall travel experience for Algerian travellers.

AI-Driven Personalisation and Eco-Conscious Behaviour: AI-Driven Personalisation was also shown to have a positive impact on Eco-Conscious Behaviour among travellers. This indicates that personalized experiences can support travellers to adopt more sustainable attitudes.

Moderating Effects: The relationship between AI-Driven Personalisation and Eco-Conscious

Behaviour was found to be moderated by Daily Green Behaviours and Public Self-awareness. The travellers with higher levels of environmental awareness and involvement exhibit eco-conscious behaviour when faced with personalized experiences.

Demographic Variations: The impact of AI-Driven Personalisation and Eco-Conscious Behaviour varied through different demographic groups. Age and platform usage were found to influence the effectiveness of these factors.

Finally, the findings of our study show that AI-Driven Personalisation can be a valuable tool to promote sustainable tourism and enhance traveller satisfaction. By personalizing experiences to travellers' preferences and needs, tourism service providers can encourage travellers to adopt more eco-conscious behaviours and attitudes to ensure a positive and memorable journey.

CHALLENGES AND CONSIDERATIONS

While AI-Driven Personalisation offers significant potential impact on travellers' satisfaction and eco-consciousness attitudes, it's important to address several challenges, and tourism providers must take into account data privacy, ethical implications, technical limitations, and user acceptance. And the travel industry can harness the power of AI to promote sustainable tourism and create memorable experiences for travellers.

FUTURE SCOPE OF RESEARCH

The provided recommendations advocate for a comprehensive approach to AI-Driven Personalisation in eco-conscious travel. They suggest conducting long-term studies to assess its impact, developing ethical frameworks, ensuring scalability and affordability, considering cross-cultural perspectives, integrating with emerging technologies, fostering collaboration, and establishing global governance. By addressing these areas, the tourism industry can effectively leverage AI to promote sustainable practices while ensuring ethical and responsible travel experiences.

BIBLIOGRAPHY:

1. Akter, S., Babu, M. M., Hani, U., Sultana, S., Bandara, R., & Grant, D. (2024). Unleashing the power of artificial intelligence for climate action in industrial markets;
2. Industrial Marketing Management. Available at: <https://doi.org/10.1016/j.indmarman.2023.12.011>;
3. Almquist, Y. B., Signild Kvart, Brännström, L. (2020). A practical guide to quantitative methods with SPSS. 3787995 Bytes. Available at: <https://doi.org/10.17045/STHLMUNI.10321829>;
4. Booking.com Partners (Director). (2023, October 10). New & Next at Booking.com [Video recording]. Available at: <https://www.youtube.com/watch?v=_Jsdc7mZHg8>.
5. Chen, G., Peng, J. (2023). Promoting sustainable tourism destinations: Support and its role in tourist environmentally responsible behaviour. Environment, Development and Sustainability. Available at: <https://doi.org/10.1007/s10668-023-04095-y>;
6. Dalla Vecchia, A., Migliorini, S., Quintarelli, E., Gambini, M., Belussi, A. (2024). Promoting sustainable tourism by recommending sequences of attractions with deep reinforcement learning. Information Technology & Tourism, 26(3). Available at: <https://doi.org/10.1007/s40558-024-00288-x>;
7. Escobar-Farfán, M., Cervera-Taulet, A., Schlesinger, W. (2024). Destination brand identity: Challenges, opportunities, and future research agenda. Cogent Social Sciences, 10(1), 2302803. Available at: <https://doi.org/10.1080/23311886.2024.2302803>;
8. ForwardKeys. (2018, June 19). Skyscanner and ForwardKeys join forces to reveal the future of regional travel behaviour. Available at: <https://forwardkeys.com/skyscannerand-forwardkeys-join-forces-to-reveal-the-future-of-regional-travel-behaviour/>;
9. Jorzik, P., Antonio, J. L., Kanbach, D. K., Kallmuenzer, A., Kraus, S. (2024). Sowing the seeds for sustainability: A business model innovation perspective on artificial intelligence in green technology startups. Technological Forecasting and Social Change, 208, 123653. Available at: <https://doi.org/10.1016/j.techfore.2024.123653>;
10. Ku, E. C. S., Chen, C.-D. (2024). Artificial intelligence innovation of tourism businesses: From satisfied tourists to continued service usage intention. International Journal of Information Management, 76, 102757. Available at: <https://doi.org/10.1016/j.ijinfomgt.2024.102757>;
11. Kumar, P., Aggarwal, B., Kumar, V., Saini, H. (2024). Sustainable tourism progress: A 10-year bibliometric analysis. Cogent Social Sciences, 10(1), 2299614. Available at: <https://doi.org/10.1080/23311886.2023.2299614>;
12. Kvasova, O. (2015). The Big Five personality traits as antecedents of eco-friendly tourist behavior. Personality and Individual Differences, 83. Available at: <https://doi.org/10.1016/j.paid.2015.04.011>;
13. Majid, G. M., Tussyadiah, I., Kim, Y. R., Pal, A. (2023). Intelligent automation for sustainable tourism: A systematic review. Journal of Sustainable Tourism, 31(11). Available at: <https://doi.org/10.1080/09669582.2023.2246681>;
14. Malik, S., Muhammad, K., Waheed, Y. (2024). Artificial intelligence and industrial applications – A revolution in modern industries. Ain Shams Engineering Journal, 15(9), 102886. Available at: <https://doi.org/10.1016/j.asej.2024.102886>;
15. Milton, D. T. (2024). Artificial Intelligence Transforming Hotel Gastronomy: An In-depth Review of AI-driven Innovations in Menu Design, Food Preparation, and Customer Interaction, with a Focus on Sustainability and Future Trends in the Hospitality Industry. International Journal for Multidimensional Research Perspectives, 2(3), Article 3. Available at: <https://doi.org/10.61877/ijmrp.v2i3.126>.
16. mta.gov.dz. (2008). Le Schéma Directeur d'Aménagement Touristique 2030. Ministère de l'Aménagement du Territoire, de l'Environnement et du Tourisme. Available at: <https://www.mta.gov.dz/le-schema-directeur-damenagement-touristique-030/?lang=fr>;
17. mta.gov.dz. (2023). Connaître l'Algérie. Available at: <https://www.mta.gov.dz/connaitrelalgerie/?lang=-fr>;
18. Ozcan, B., Bozoklu, S., Khan, D. (2021). Tourism Sector and Environmental Quality: Evidence from Top 20

Tourist Destinations. In D. Balsalobre-Lorente, O. M. Driha, M. Shahbaz (Eds.), Strategies in Sustainable Tourism, Economic Growth and Clean Energy. Springer International Publishing. Available at: <https://doi.org/10.1007/978-3-030-596750_3>;

19. Ribeiro, M. A., Seyfi, S., Elhoushy, S., Woosnam, K. M., Patwardhan, V. (2023). Determinants of Generation Z pro-environmental travel behaviour: The moderating role of green consumption values. Journal of Sustainable Tourism. Available at: <https://doi.org/10.1080/09669582.2023.2230389>;
20. Sadiq, M., Adil, M., Paul, J. (2022). Eco-friendly hotel stay and environmental attitude: A value-attitude-behaviour perspective. International Journal of Hospitality Management, 100, 103094. Available at: <https://doi.org/10.1016/j.ijhm.2021.103094>;
21. Sahabuddin, M., Alam, Md. S., Nekmahmud, Md. (2024). How do perceived and environmental values influence tourist satisfaction, loyalty, and environmental awareness? Environment, Development and Sustainability. Available at: <https://doi.org/10.1007/s10668-024-050943>;
22. Skyscanner. (2023, December 15). Our commitment to net zero. Available at: <https://www.skyscanner.net/media/sustainability/our-commitment-to-net-zero>;
23. Statista. (2024, July 12). Booking.com: Total website visits worldwide 2024. Available at: <https://www.statista.com/statistics/1294912/total-visits-to-booking-website/>;
24. StatWiki. (2024, May 14). Available at: <https://statwiki.gaskination.com/index.php?title=Main_Page;
25. Su, L., Li, M., Wen, J., He, X. (2024). How do tourism activities and induced awe affect tourists' pro-environmental behavior? Tourism Management, 106, 105002. Available at: <https://doi.org/10.1016/j.tourman.2024.105002>;
26. TIES. (2015). What Is Ecotourism. The International Ecotourism Society. Available at: <https://ecotourism.org/what-is-ecotourism/>;
27. UNEP & WTO. (2005). Making Tourism more Sustainable (United Nations).
28. UNESCO World Heritage centre. (n.d.). World Heritage List. Available at: <https://whc.unesco.org/en/list> (Last access: 16.09.2024).

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ARTICLE

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SUSTAINABILITY REPORTING AS AN OPPORTUNITY TO IMPROVE GOVERNANCE REPORTING PRACTICES

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Abstract. The concept of sustainable accounting has emerged as a result of the development of accounting over the past forty years. Two different approaches emerged: The first is the debate about accountability, based on a completely new accounting system and designed to strengthen the sustainability strategy; The second approach is a management perspective, which is related to many sustainability terms. It can therefore be considered an extension of conventional financial management accounting.

The paper discusses the purpose of sustainability accounting, stages of development, and the possibility of implementing and using two of the most important standards in Georgian companies. Key considerations and responses to the use of standards in sustainability reporting regarding disclosures have been formulated. Based on European experience, Georgia has introduced international standards for sustainable development. The goal of sustainability reporting is to reduce the negative impacts of businesses on the environment and society. The main challenge is to standardize the process of preparing sustainability reports, ensuring their robustness and reliability. The introduction of standards is important and a priority for the sustainable development of local enterprises. The early adoption of these principles represents an opportunity for the country to improve its management reporting practices as stipulated in the Law on Accounting, Reporting, and Auditing of Georgia. Contribute to the creation of a more sustainable and competitive economic environment, which ultimately ensures the creation of a European business environment. The implementation of these standards will strengthen investor confidence and create opportunities for making informed decisions.

KEYWORDS: SUSTAINABLE REPORTING, IFRS STANDARDS, DISCLOSURE INFORMATION, PRODUCTION PRACTICES, ECONOMIC ENVIRONMENT.

INTRODUCTION

Sustainability accounting issues have appeared in the accounting of various countries over the past half century. Accordingly, there is a significant challenge in Georgia today. Accounting based on sustainability reporting has passed significant milestones. Today, the use of sustainability accounting information in the management process of companies is increasing. Such information is important for making the right management decisions in companies. The goal of sustainability reporting is to reduce the negative impacts of businesses on the environment and society. The main challenge is to standardize the process of preparing sustainability reports, ensuring their robustness and reliability. The introduction of standards is important and a priority for the sustainable development of local enterprises. The early adoption of these principles represents an opportunity for the country to improve its management reporting practices as stipulated in the Law on Accounting, Reporting, and Auditing of Georgia. Contribute to the creation of a more sustainable and competitive economic environment, which ultimately ensures the creation of a European business environment. The implementation of these standards will strengthen investor confidence and create opportunities for making informed decisions. The research paper aims to improve governance reporting practices by applying international sustainability reporting standards. Investors will have the opportunity to obtain more complete, reliable, and comparable information; in turn, enterprises will receive a comprehensive picture for business model evaluation and development. The information disclosed in the sustainability report will be important for internal decision-making to create new policies that will impact the economic, environmental, and social factors of the enterprise. In turn, all of this will strengthen the development of the green economy in Georgia.

The paper is based on qualitative research. The research used data from the Accounting, Reporting and Audit Supervision Service of Georgia, the Federation of Accountants and Auditors, IFRS Foundation, Sustainability Accounting Standards Board website materials.

RESULTS AND DISCUSSION

Sustainability accounting as a subcategory of management accounting, and two different approaches

Sustainability accounting is a subcategory of management accounting. The purpose of which is to use non-financial information about the activities of the enterprise for external stakeholders, creditors, and equity holders.[1] It differs from management accounting and is used to make internal decisions, create new policies, and influence the efficiency of the enterprise in economic, environmental, and social areas. According to the Global Reporting Initiative (GRI), corporate reporting on economic, social, and environmental performance is as necessary and time-consuming as financial reporting.[2]

The concept of sustainable accounting has emerged from the development of accounting over the past forty years. Two different approaches emerged.[3] The first is the debate about accountability, based on a completely new accounting system and designed to strengthen the sustainability strategy. The second approach is a management perspective, which is related to multiple sustainability terms. It can therefore be considered an extension of conventional financial management accounting.

Four main stages in the development of sustainability accounting

Sustainability accounting is a rather complex process that can be divided into four stages. Stage 1: 1971-1980; Stage 2: 1981-1990; Stage 3: 1991-1995; Stage 4: from 1995 onwards.

In the first stage – papers and empirical studies were published. Which contributed to the creation of social accounting models. The information was related to products and employees. The

1 Accounting, Reporting and Audit Supervision Service. Available at: <https://saras.gov.ge/>.

2 Global Reporting Initiative. GRI. Available at: <http://www.globalreporting.org>.

3 Slaper, T., Hall, T. (2011). The Triple Bottom Line: What Is It and How Does It Work? Indiana Business Review, Vol. 86, No. 1. Available at: <https://www.ibrc.indiana.edu/ibr/2011/spring/a rticle2.html>.

methodology was identical to financial accounting. Although several models were improved, the debate was not widespread.

In the second stage – literature and research show how the field of social accounting has been refined, although interest in this field has shifted to environmental accounting. Empirical research has become more analytical, with social information replaced by a focus on environmental regulations as an alternative means of reducing environmental damage. At this stage, the development of training programs on social and environmental accounting issues has begun. Through the increasing use of conceptual frameworks, accounting standards, and legal provisions.

In the third stage – environmental audit applications were developed to ensure transparency of environmental information. Environmental management systems and a regulatory framework were developed, which would influence the transparency of social and environmental accounting. The process of environmental regulation in the US, Canada, and Australia has progressed more rapidly than in Europe. At this stage, several manuals were issued and articles were published covering both social and environmental accounting issues.

The role and purpose of sustainability and management accounting information has become an interesting object of study for the sustainable development of enterprises.

The fourth stage – the initial period – is characterized by the approximately, this has led to the emergence of global and regional issues of management quality control. Since this period, special attention has been paid to accounting for environmental costs, which includes choosing suppliers whose views and practices regarding ecology are consistent with those of customers. It also refers to the costs of destroying waste products in the production process, after-sales service, and product withdrawal from the market.

Environmental cost accounting provides support for a company's environmental management initiatives.[4]

The role of the International Federation of Accountants in sustainability accounting

All of the above have led to the development of the accounting profession with international issues. Accounting literature has been published, focusing on sustainability accounting issues. Many international and national meetings are held on sustainability accounting issues.[5] The most developed form of sustainability accounting is environmental accounting. In 2002, at the World Summit on Sustainable Development, Robert Hugh Gray's Sustainability Accounting Guidelines were published.[6]

In recent years, interest in corporate sustainability accounting and reporting approaches has increased. Experts from international organizations argue that the sustainability aspects of accounting and reporting are of crucial importance in assessing the future development of enterprises. In this regard, the role of the International Federation of Accountants (IFAC) is important. Its goal is to promote the development of the accounting profession and harmonize it with standards. It has 167 member organizations in 127 countries and approximately two million accountants worldwide. To encourage professional accountants to incorporate sustainability into their accounting, the Prince of Wales created the Accounting for Sustainability Project in 2004.[7] The goal of sustainability accounting is to transition to sustainable business models and a sustainable economy. The popularity of sustainability has grown recently, with many companies already using new methods and techniques when publishing financial information. They provide external users with information about key activities and environmental impacts. This information helps suppliers, buyers, and government agencies understand how busi-

4 Atkinson, A., Kaplan, R., Matsumura, E.M., Young, S. (2009). Government Accounting, Georgian Herald Publishing House, p.337.

5 Kvantrishvili, N. (23.12.2024). Corporate Sustainability Reporting and Transparency in the Fight Against Corruption: A Business Perspective. Available at: <https://unglobalcompact.ge/sustainability-spotlight/korporaciuli-mdgrado-bis-angarishgeba-da-gamchvirvaloba-korufci-astan-brdzolis-processhi-biznesis-perspeqtiva>.

6 Sustainability Accounting Standards Board. Available at: <http://www.sasb.org>.

7 International Federation of Accountants. Available at: <https://www.ifac.org>.

nesses are managing their resources so that they can achieve sustainable development.

As a result of studying the issue, three areas of sustainability were identified: social, economic and environmental. Each of them depends on different factors.[8] That is why it is necessary to develop enterprises in the direction of environmental, social and governance processes.

The role of the European Union in the development of sustainable development reporting and two international sustainability standards

In 2022, the European Commission developed the Corporate Sustainability Reporting Directive (CSRD), which entered into force on January 5, 2023.[9] This directive replaced the previously existing Non-Financial Reporting Directive with updated wording and requirements. Preparing corporate sustainability reports for enterprises using relevant standards; It became mandatory for the 2024 reporting period, which will be submitted to local authorities starting in 2025. Georgia is actively working in this direction within the framework of European perspectives, to introduce best practices in the country.

Two IFRS sustainability disclosure standards issued by the International Sustainability Standards Board (ISSB) in 2023 have already been translated into Georgian and published.[10] These are:

- **IFRS S1** – General requirements for financial disclosure on corporate sustainable development;
- **IFRS S2** – Climate-related disclosure information.

Companies that must prepare a corporate sustainability report

The new requirements will apply to up to 50,000 companies across the EU. According to the CSRD, companies must prepare a corporate sustainability report if they:[11]

1. Representing "large" enterprises in the European Union (including banks, insurance companies, accountable enterprises, whose securities are admitted to trading on the stock exchange, and enterprises designated as SDP by local authorities);
2. There are small and medium-sized enterprises on the EU-listed market;
3. Enterprises that have a branch or subsidiary within the European Union.

These companies are required to disclose information about how environmental and social issues affect the risks and challenges they face. They must also disclose information about the impact their business model has on people and the environment. As we mentioned, the European Commission has developed a directive on corporate sustainability reporting, which will replace the existing Non-Financial Reporting Directive. According to the new directive, the preparation of corporate sustainability reports using relevant standards will become mandatory for EU member states. Companies have many questions about this.

Key considerations and feedback on the use of standards in sustainability reporting regarding disclosures

1. A company that uses accounting standards will it be required to present the information disclosed in the sustainability report in accordance with IFRS standards? IFRS accounting standards apply to financial statements. It will not be mandatory, but it will be up to the company to decide whether companies in the jurisdiction will use IFRS standards to protect the informa-

8 Adams, W. (29-31 January 2006). The Future of Sustainability: Rethinking the Environment and Development in the Twenty-First Century; Report of the IUCN Eminent Thinkers Meeting.

9 A brief description of the draft corporate sustainability reporting standard. (March 2022). IFRS® Sustainability Disclosure Standards.

10 IFRS Foundation. (2022). Available at: <https://www.ifrs.org/content/dam/ifrs/project/g eneral-sustainability-relateddisclosures/ georgian/georgian-s1-and-s2-edssnapshot – april-2022.pdf>.

11 A brief description of the draft corporate sustainability reporting standard. (March 2022). IFRS® Sustainability Disclosure Standards.

tion that is being disclosed in sustainable reporting. In addition, the company must make a separate statement stating that it has complied with all requirements for all information related to sustainable development. This information must be presented in accordance with sustainable reporting standards and must be consistent with any accounting principles.[12]

2. Will IFRS standards for disclosure of information related to sustainable development be mandatory? The International Sustainable Development Standards Council does not have the authority to grant mandatory status to standards. However, companies can voluntarily choose to use them.
3. Will the application of the standards proposed by the International Sustainable Development Standards Council begin gradually? A company is not required to present comparative information when first adopting a standard, but has the option to do so. This proposal will make it easier for the company to comply with the requirements and provide investors with sustainability-related information as quickly as possible.
4. Will it be mandatory to report information related to sustainable development in a specific location, in a specific format, or a separate report? Financial information related to sustainable development must be part of a company's general purpose financial statements. However, the company can provide information in different ways. The draft standards do not establish any specific structure. For example, in the form of a physical report, in a prescribed document format, as a tagged data file, or via a website. Some jurisdictions have specific formats or reporting requirements. For example, XBRL-based files or a report in PDF format.[13]
5. If there is no such standard for disclosure of information related to sustainable development, which deals with the risks and opportunities associated with the sustainable development of a particular company, if so, what guidelines or requirements must this company comply with? The draft Common Requirements for Discussion provides companies with sources, which will help them identify appropriate risks and opportunities related to sustainable development and prepare information for disclosure, which will allow investors to assess the value of the enterprise. The company is advised to consider the requirements of the SASB standards, non-binding requirements of the International Sustainable Development Standards Council (for example, applying the CDSB principles to biodiversity disclosures), and standards developed by some other bodies. Most importantly, the standards that a company adopts should be designed to meet the information needs of investors. In addition, companies can also consider established practices in the industry. The climate-related requirements of the SASB standards are the basis for the climate-related project under consideration. Possible changes in requirements are expected. As a result of the proposed changes, some indicators will be updated to improve their international applicability; For the financial sector, requirements will be added regarding indicators related to funded and facilitated emissions. Also, if a company uses the proposals of the climate-related project under consideration, it will meet the TCFD recommendations.[14]

CONCLUSION

For Georgia to comply with the requirements of the European Union, the Accounting and Reporting Service plans to reflect the changes made to the regulatory directives and regulations in the legislation.[15] They will also develop sustain-

12 European Sustainability Reporting Standards – ESRS. (13.01.2025).

13 Sustainability Reporting Update International Sustainability Reporting Bulletin 2025/01. (December 2024). Available at: <https://www.bdo.global/getmedia/5a181e3f-0a64-4dc2-be8b 98dcab4bb5eb/ISRB_2025_01_(final).pdf?ext=.pdf>.

14 IFRS S2 Climate-related disclosures. Available at: <https://www.saras.gov.ge/ka/home/esrs>.

15 Ministry of Finance Accounting, Reporting and Au-

ability reporting guidelines based on standards, research, share and implement international best practices, they will conduct training, disseminate information to raise awareness, and implement other socially beneficial activities.

Currently, the International Standards Board (ISSB) plans to use two international standards for corporate sustainability reporting in enterprises. Through these standards, investors will have the opportunity to obtain more complete, reliable, and comparable information necessary to assess the value of an enterprise and manufacturers will get a more comprehensive picture for business model evaluation and development.

In the future, I will continue to develop ideas on other risks, opportunities, and priorities related to sustainable development, which will be suitable for valuing the enterprise, as well as opinions on further improving industry requirements, based on the SASB standards. All of this will be an opportunity to strengthen the green economy.

dit Supervision Service. Strategy for the years 2023-2026. Available at: <https://www.saras.gov.ge/Content/files/SARAS_Strategy_2023-20262.pdf>.

BIBLIOGRAPHY:

1. A brief description of the draft corporate sustainability reporting standard. (March 2022). IFRS® Sustainability Disclosure Standards.
2. Accounting, Reporting and Audit Supervision Service. Available at: <https://saras.gov.ge/> (Last access: 03.04.2025);
3. Adams, W. (29-31 January 2006). The Future of Sustainability: Rethinking the Environment and Development in the Twenty-First Century; Report of the IUCN Eminent Thinkers Meeting.
4. Atkinson, A., Kaplan, R., Matsumura, E.M., Young, S. (2009). Government Accounting, Georgian Herald Publishing House.
5. European Sustainability Reporting Standards – ESRS. (13.01.2025). (Last Access: 03/04/2025);
6. Global Reporting Initiative. GRI. Available at: <http://www.globalreporting.org> (Last access: 03.04.2025);
7. IFRS Foundation. (2022). Available at: <https://www.ifrs.org/content/dam/ifrs/project/g eneral-sustainability-relateddisclosures/ georgian/georgian-s1-and-s2-edssnapshot – april-2022.pdf> (Last access: 03/04/2025);
8. IFRS S2 Climate-related disclosures. Available at: <https://www.saras.gov.ge/ka/home/esrs>;
9. International Federation of Accountants. Available at: https://www.ifac.org> (Last access: 03/04/2025);
10. Kvantrishvili, N. (23.12.2024). Corporate Sustainability Reporting and Transparency in the Fight Against Corruption: A Business Perspective. Available at: <https://unglobalcompact.ge/sustainability-spotlight/korporaciuli-mdgradobis-angarishgeba-da-gamchvirvaloba-korufciastan-brdzolis-processhi-biznesis-perspeqtiva>.
11. Ministry of Finance Accounting, Reporting and Audit Supervision Service. Strategy for the years 2023-2026. Available at: <https://www.saras.gov.ge/Content/files/SARAS_Strategy_2023-20262.pdf>.
12. Slaper, T., Hall, T. (2011). The Triple Bottom Line: What Is It and How Does It Work? Indiana Business Review, Vol. 86, No. 1. Available at: <https://www.ibrc.indiana.edu/ibr/2011/spring/a rticle2.html> (Last access: 03.04.2025);
13. Sustainability Accounting Standards Board. Available at: <http://www.sasb.org> (Last access: 03/04/2025);
14. Sustainability Reporting Update International Sustainability Reporting Bulletin 2025/01. (December 2024). Available at: <https://www.bdo.global/getmedia/5a181e3f-0a64-4dc2-be8b 98dcab4bb5eb/ISRB_2025_01_(final).pdf?ext=.pdf>.

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ARTICLE

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THE MEDIATING ROLE OF ORGANIZATIONAL COMMITMENT BETWEEN ORGANIZATIONAL JUSTICE AND JOB PERFORMANCE

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Abstract. The purpose of this study is to assess the mediating role of organizational commitment (OC) between organizational justice (OJ) and job performance (JP). The data was collected from 281 employees using a questionnaire approach. The data analysis used Smarts PLS for assessing the measurement and structure models. The results indicated that organizational commitment mediated the relationship between organizational justice and job performance. The results also showed that OJ has a significant impact on OC and JP, and OC significantly impacts JP.

Managers must be familiar with the essential rules to improve job performance, organizational commitment, and organizational justice while also considering proper conduct. Furthermore, the necessary facilities for promoting professional advancement and training should be established to bolster banks' current and future demands. The paper elucidates the conclusions and their limitations while also proposing avenues for further research. This study enhances the theoretical framework within organizational theory, organizational behavior, and psychological research, particularly concerning the Iraqi banking sector. However, the study advises banking industry managers to provide fairness and justice in the evaluation processes to improve employee commitment.

KEYWORDS: ORGANIZATIONAL COMMITMENT, ORGANIZATIONAL JUSTICE, JOB PERFORMANCE, BANKS.

INTRODUCTION

Unlike in previous eras, human resources are perceived as essential to business efficiency.[1] In the past few years, academicians have debated the strategic significance of human resources (HR) in a world that is dominated by intellectual capital. The new narrative contradicts several study findings indicating that businesses frequently substitute human resources with alternative elements

1 Jehanzeb, K., Mohanty, J. (2019). The mediating role of organizational commitment between organizational justice and organizational citizenship behavior. Personnel Review, 49(2), pp. 445–468.

of production when expedient.[2] In most instances, human resources are perceived as a cost that should be reduced, particularly during challenging periods.[3] However, emerging trends provide some encouraging indications that a significant portion of this is undergoing rapid change. HR has transitioned from a cost center to a profit center. In specific sectors, such as technology, banking, services, and knowledge-based work systems, it is the sole primary resource, with others considered secondary.[4] The resource-based perspective posits that the organization's strategic value is significantly influenced by its knowledge, skills, and abilities, making it unique.[5] Nowadays, organizations consider human resources essential for their continued operation. Consequently, they value their perceptions highly and respect their opinions.[6] Consequently, addressing the factors potentially affecting employees' perceptions is essential. OJ and OC are two examples of such factors. OJ refers to individuals' views of fairness in their treatment inside an organization. It is often examined to determine its impact on elements influencing organizational performance, such as OC.[7]

Practitioners and scholars have paid more attention to the concept of justice and process in the workplace. The Staff will express their appreciation when they feel fairness exists in their workplace. HR managers are mainly concerned with the perception of justice, impartial organizational processes, and process impartiality.[8] It is frequently held that securing fair procedures within organizational justice frameworks can enhance employee commitment, productivity, and performance.[9] High job performance is predicated on equitable organizational practices, which include essential elements such as distributive, procedural, and interactional justice.[10] This study defines organizational justice as fair job duties at all organizational levels that are acceptable to all individuals. Employees may perceive these behaviors in terms of equity and organizational justice. Consequently, this study examines organizational justice as a critical prerequisite to assessing its influence on OC.

Several studies have extensively examined organizational commitment.[11,12] The extensive literature on organizational commitment indicates that it can lead to positive results for both employees and the organizations, including enhanced job performance, productivity, and commitment.[13,14,15] Consequently, organizations must prioritize organizational commitment as a significant individual concern, as it results in favorable outcomes in the workplace. However, several previous studies examined the Affective organizational commitment,

2 Snell, S. A., Shadur, M. A., Wright, P. M. (2005). Human Resources Strategy. In The Blackwell Handbook of Strategic Management, Wiley, pp. 631–653.

3 Gill, C. (2018). Don't know, don't care: An exploration of evidence based knowledge and practice in human resource management. Human Resource Management Review, 28(2), pp. 103–115.

4 Jehanzeb, K., Mohanty, J. (2019). The mediating role of organizational commitment between organizational justice and organizational citizenship behavior. Personnel Review, 49(2), pp. 445–468.

5 Boon, C., Boselie, J. P., Dietz, G. (2005). Commonalities and contradictions in research on human resource management and performance. Human Resource Management, 15(3), pp. 67–94.

6 Salam, A. (2020). Organizational justice as a predictor of organizational citizenship behaviour. International Business Education Journal, 13, pp. 29–42.

7 Cohen-Charash, Y., Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. Organizational Behavior and Human Decision Processes, 86(2), pp. 278–321.

8 Salam, A. (2020). Organizational justice as a predictor of organizational citizenship behaviour. International Business Education Journal, 13, 29–42.

9 Ibid.

10 Greenberg, J., Colquitt, J. A. (2013). Handbook of organizational justice. Psychology Press.

11 Allen, N. J., Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. Journal of Vocational Behavior, 49(3), pp. 252-276.

12 Meyer, J. P., Smith, C. A. (2000). HRM Practices and Organizational Commitment: Test of a Mediation Model. Canadian Journal of Administrative Sciences / Revue Canadienne Des Sciences de l'Administration, 17(4), pp. 319–331.

13 Jameel, A. S., Mahmood, Y. N., Jwmaa, S. J. (2020). Organizational Justice and Organizational Commitment among Secondary School teachers. Cihan University-Erbil Journal of Humanities and Social Sciences, 4(1), pp. 1–6. Available: <https://doi.org/10.24086/cuejhss.vol4n1y2020.pp1-6c>.

14 Meyer, J. P., Allen, N. J. (1997). Commitment in the workplace: Theory, research, and application. Sage.

15 Ohana, M., Meyer, M. (2016). Distributive justice and affective commitment in nonprofit organizations. Employee Relations, 38(6), pp. 841–858.

such as,[16,17,18] and limited studies examined the overall organizational commitment,[19] particularly in Iraq. The purpose of this study is to find the impact of OJ on JP and the mediating role of OC.

1. LITERATURE REVIEW

1.1. Social exchange theory

"Social exchange theory", proposed by Blau in 1964,[20] offers a broad conceptual framework that justice researchers utilize to clarify the influence of individuals' understanding of justice on JP, commitment, and other results at work. The concept of social exchange perception, initially formulated by Gouldner (1960)[21] and Blau (1964),[22] is the dominant framework used to elucidate the interactions between an organization and its staff. Wayne et al. (2002),[23] establish that workers' favorable emotions are contingent upon their assessment of the company's level of investment in them. This concept aligns with the principles of social exchange theory, which posits that exchanges are based on voluntary behaviors rather than formal contracts, in contrast to economic exchanges.[24] Gouldner (1960)[25] defines social exchange as a form of mutually satisfying interaction between both parties, characterized by the development of reciprocal behavior guided by a widely accepted moral standard. In this form of reciprocity, the exchange of reciprocal advantages, namely psychological benefits, helps to uphold a stable social order.[26] Put simply, when an organization shows kindness towards an employee, it develops a sense of duty for the worker to reciprocate with a positive action.[27,28] Greenberg (1990)[29] suggests that justice can explain several organizational characteristics, such as attitudes and behavior. Within the corporate setting, justice is seen as a significant catalyst for trade or reciprocity. The employee's thoughts of justice directly influence the quality of the link between them and the workplace. Based on the principles of reciprocity, individuals see the way they are viewed by other social entities as either positive or negative.[30] The "Social exchange theory" posits that by fulfilling individual's emotional and social needs, organizations may enhance individual commitment to the organization's purposes, hence resulting in improved job performance.[31]

16 Jiang, Z. (2015). The relationship between justice and commitment: the moderation of trust. Asia-Pacific Journal of Business Administration, 7(1), pp. 73–88.

17 Kim, S. H., Laffranchini, G., Jeung, W. (2018). Moderating effect of subordinates' overall justice in the relationship between supervisors' overall justice and supervisors' affective organizational commitment. Journal of Management Development, 37(7), pp. 526–536.

18 Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4), pp. 542–559.

19 Abdullah, H. O., Al-Abrrow, H. (2023). Impact of perceived organisational justice, support and identity on workplace behaviour through job attitudes: verification in the role of LOC. International Journal of Organizational Analysis, 31(6), pp. 2645–2664.

20 Blau, P. (1964). Exchange and power in social life. Wiley.

21 Gouldner, A. W. (1960). The Norm of Reciprocity: A Preliminary Statement. American Sociological Review, 25(2), p. 161.

22 Blau, P. (1964). Exchange and power in social life. Wiley.

23 Wayne, S. J., Shore, L. M., Bommer, W. H., Tetrick, L. E. (2002). The role of fair treatment and rewards in perceptions of organizational support and leader-member exchange. Journal of Applied Psychology, 87(3), pp. 590–598.

24 Blau, P. (1964). Exchange and power in social life. Wiley.

25 Gouldner, A. W. (1960). The Norm of Reciprocity: A Preliminary Statement. American Sociological Review, 25(2), p. 161.

26 Jameel, A. S., Ahmad, A. R., Mousa, T. S. (2020). Organizational justice and job performance of academic staff at public universities in Iraq. Skyline Business Journal, 16(1).

27 Gouldner, A. W. (1960). The Norm of Reciprocity: A Preliminary Statement. American Sociological Review, 25(2), p. 161.

28 Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4), pp. 542–559.

29 Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. Journal of Management, 16(2), pp. 399–432.

30 Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4), pp. 542–559.

31 Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias,

1.2 Organizational justice

"Organizational justice" refers to workers' subjective evaluation of the fairness of their treatment inside the workplace. It is commonly investigated to determine its impact on other aspects that influence organizational performance, such as "organizational commitment and job satisfaction".[32] According to Greenberg (2001),[33] justice in the workplace is related to positive and negative individual behaviours. Individuals assess the level of fairness in the operations and gains of organizations based on the effort they put in.[34] Within organizations, people regularly compare and evaluate themselves in relation to their colleagues. Therefore, the attitudes of these employees are formed based on their opinions of justice.[35,36] Organizational justice is the beliefs and behaviors that determine whether individuals feel they have been treated fairly and equitably in terms of rewards in their employment. It also involves examining how these perceptions affect other results.[37] According to scholars Greenberg and Colquitt (2013),[38] when an employer treats its staff members fairly and is seen as fair by staff members, it increases the possibility of staff engaging in productive conduct that ultimately benefits the workplace.

"Equity theory"[39] and "Social Exchange Theory (SET)" (Blau, 1964)[40] propose that individuals evaluate the worth of their association with an organization, taking into account the difficulties and advantages involved. This evaluation is influenced by the pay that they get from their job.

There are different perspectives on the dimensions of organizational justice. Some argue that it has three types ("distributive, procedural and interactional"),[41] while others, such as Bies (2001)[42] and Colquitt (2001),[43] propose a fourth dimension called informational justice. Distributive justice is the subjective assessment of resource allocation by individuals in relation to their anticipated contributions and the outcomes they receive.[44] Procedural justice is the concept of fairness that staff members perceive in accordance with the workplace policies and procedures.[45] Interactional justice is the term used to describe the degree of equity that staff members perceive in their interpersonal interactions within the workplace.[46]

Also, there is no broad agreement regarding organizational justice as a holistic or multidimensional construct. Previous studies examined orga-

S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903.

32 Cohen-Charash, Y., Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. Organizational Behavior and Human Decision Processes, 86(2), pp. 278–321.

33 Greenberg, J. (2001). Setting the Justice Agenda: Seven Unanswered Questions about "What, Why, and How". Journal of Vocational Behavior, 58(2), pp. 210–219.

34 Abdullah, H. O., Al-Abrrow, H. (2023). Impact of perceived organisational justice, support and identity on workplace behaviour through job attitudes: verification in the role of LOC. International Journal of Organizational Analysis, 31(6), pp. 2645–2664.

35 Ibid.

36 Salam, A. (2020). Organizational justice as a predictor of organizational citizenship behaviour. International Business Education Journal, 13, pp. 29–42.

37 Ibid.

38 Greenberg, J., Colquitt, J. A. (2013). Handbook of organizational justice. Psychology Press.

39 Adams, J. S. (1965). Inequity In Social Exchange. Advances in Experimental Social Psychology.

40 Blau, P. (1964). Exchange and power in social life. Wiley.

41 Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. Journal of Management, 16(2), pp. 399–432.

42 Bies, R. J. (2001). Interactional (in) justice: The sacred and the profane. Advances in organizational justice/Stanford University Press.

43 Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. Journal of Applied Psychology, 68(3), pp. 386–399.

44 Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. Journal of Management, 16(2), pp. 399–432.

45 Brockner, J., Ackerman, G., Greenberg, J., Gelfand, M. J., Francesco, A. M., Chen, Z. X., Leung, K., Bierbrauer, G., Gomez, C., Kirkman, B. L., Shapiro, D. (2001). Culture and Procedural Justice: The Influence of Power Distance on Reactions to Voice. Journal of Experimental Social Psychology, 37(4), pp. 300–315.

46 Greenberg, J., Colquitt, J. (2005). Handbook of Organizational Justice (Lawrence E). Mahwah NJ.

nizational justice as a holistic construct,[47,48,49,50,51] based on the fairness heuristic theory, people in the workplace attend to overall justice besides the dimensions of justice.[52] Aryee et al. (2015)[53] maintained that justice could describe "the depth and richness" of individuals' holistic justice experiences, which kinds of justice may not fully represent. They discovered that justice positively correlates with satisfaction and trust in the workplace. Jones and Martens (2009)[54] identified that justice is distinct from four categories of organizational justice "(distributive, procedural, interpersonal, and informational)" and is closely associated with emotional and organizational commitment.

In conclusion, there is no consensus on whether justice is a multi-faceted or holistic concept. This paper's premise is based on an adaptation of the justice heuristic theory argument by Lind (2001)[55] and Ambrose and Schminke (2009).[56] According to this theory, people's perceptions of OJ are based on four different kinds of justice, and how people act and think is more important than any one kind of justice in shaping their overall perceptions of justice. So, rather than concentrating on specific forms of organizational justice, this paper explores how individuals perceive justice in general.

1.3 Organizational commitment

Employee commitment is often seen as a crucial determinant of organizational productivity and performance.[57] O'Reilly and Chatman (1986)[58] indicated that OC constitutes a psychological connection or relationship between a person and the organization. Allen and Meyer (1996)[59] define OC as the psychological bond the staff members have towards an organization, which minimizes their inclination to leave the workplace. Organizational commitment, similar to organizational justice, is built on the social exchange theory, wherein staff members reciprocate favourable

47 Imamoglu, S. Z., Ince, H., Turkcan, H., Atakay, B. (2019). The Effect of Organizational Justice and Organizational Commitment on Knowledge Sharing and Firm Performance. Procedia Computer Science, 158, pp. 899–906.

48 Jehanzeb, K., Mohanty, J. (2019). The mediating role of organizational commitment between organizational justice and organizational citizenship behavior. Personnel Review, 49(2), pp. 445–468.

49 Jones, D. A., Martens, M. L. (2009). The mediating role of overall fairness and the moderating role of trust certainty in justice–criteria relationships: the formation and use of fairness heuristics in the workplace. Journal of Organizational Behavior, 30(8), pp. 1025–1051.

50 Kim, S. H., Laffranchini, G., Jeung, W. (2018). Moderating effect of subordinates' overall justice in the relationship between supervisors' overall justice and supervisors' affective organizational commitment. Journal of Management Development, 37(7), pp. 526–536.

51 Rauf, A., Mahmood, H., Naveed, R. T., Yen, Y. Y. (2024). Modeling cynicism and organizational design on job performance: Mediation and moderation mechanism. Heliyon, 10(11), e32069.

52 Lind, E. A. (2001). Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations (C. Stanford University Press, Stanford (ed.)). Advances in organizational justice/Stanford University Press.

53 Aryee, S., Walumbwa, F. O., Mondejar, R., Chu, C. W. L. (2015). Accounting for the Influence of Overall Justice on Job Performance: Integrating Self-Determination and Social Exchange Theories. Journal of Management Studies, 52(2), pp. 231–252.

54 Jones, D. A., Martens, M. L. (2009). The mediating role of overall fairness and the moderating role of trust certainty in justice–criteria relationships: the formation and use of fairness heuristics in the workplace. Journal of Organizational Behavior, 30(8).

55 Lind, E. A. (2001). Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations (C. Stanford University Press, Stanford (ed.)). Advances in organizational justice/Stanford University Press.

56 Ambrose, M. L., Schminke, M. (2009). The role of overall justice judgments in organizational justice research: A test of mediation. Journal of Applied Psychology, 94(2), pp. 491–500.

57 Meyer, J. P., Allen, N. J., Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. Journal of Applied Psychology, 78(4), pp. 538–551.

58 O'Reilly, C. A., Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. Journal of Applied Psychology, 71(3).

59 Allen, N. J., Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. Journal of Vocational Behavior, 49(3), pp. 252-276.

experiences from the organization.[60] Employees with a high degree of commitment will probably remain, maintain their association, and support the organization in attaining its objectives.[61] The term of OC has been associated with several characteristics within an organizational context, including OJ,[62] leadership.[63] Organizational commitment pertains to the loyalty of individuals towards their organizations. OC relies on the assessment of an individual's perception of the quality of psychological contracts.[64] Organizational commitment consists of three main elements: "affective commitment, normative commitment, and continuance commitment".[65]

Affective commitment pertains to an organizational member's emotional tie to the organization, namely the degree to which they desire membership and align with its objectives.[66]

Normative commitment pertains to a member's sense of moral responsibility to the organization, specifically the degree to which they believe they should remain affiliated.[67]

Continuance commitment: pertains to the expenses associated with departing from the organization, encompassing the loss of perceived advantages and the challenges of securing an alternative job.[68] Several previous studies measured the OC as a single construct, such as.[69,70,71]

1.4 Job performance

Job performance is a metric utilized in research within occupational environments.[72] Several kinds of research across disciplines, such as HRM, the health area, and industrial-organizational psychology, have investigated the determinants and consequences of employee JP. Job performance is a critical determinant in an organization that motivates all operations towards attaining organizational objectives.[73,74] Subsequently, studies determined the concept of job performance to comprehend its intrinsic structure,[75] shifting from the prior emphasis on task

60 Blau, P. (1964). Exchange and power in social life. Wiley.

61 Massoudi, A. H., Jameel, A. S., Ahmad, A. R. (2020). Stimulating Organizational Citizenship Behavior by Applying Organizational Commitment and Satisfaction. International Journal of Social Sciences and Economic Review, 02(02), pp. 20–27.

62 Karem, M. A., Jameel, A. S., Ahmad, A. R. (2019). The Impact of Organizational Justice Dimensions on Organizational Commitment among Bank Employees. International Journal of Psychosocial Rehabilitation, 23(02), pp. 502–513.

63 Yiing, L. H., Zaman, K., Ahmad, B., Yiing, L. H., Zaman, K., Ahmad, B. (2009). The moderating effects of organizational culture on the relationships between leadership behaviour and organizational commitment and between organizational commitment and job satisfaction and performance.

64 Abdullah, H. O., Al-Abrrow, H. (2023). Impact of perceived organisational justice, support and identity on workplace behaviour through job attitudes: verification in the role of LOC. International Journal of Organizational Analysis, 31(6), pp. 2645–2664.

65 Allen, N. J., Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. Journal of Vocational Behavior, 49(3), pp. 252-276.

66 Ibid.

67 Ibid.

68 Ibid.

69 Imamoglu, S. Z., Ince, H., Turkcan, H., Atakay, B. (2019). The Effect of Organizational Justice and Organizational Commitment on Knowledge Sharing and Firm Performance. Procedia Computer Science, 158, pp. 899–906.

70 Jehanzeb, K., Mohanty, J. (2019). The mediating role of organizational commitment between organizational justice and organizational citizenship behavior. Personnel Review, 49(2), pp. 445–468.

71 Nazarian, A., Atkinson, P., Foroudi, P., Edirisinghe, D. (2020). Leaders ororganisations? Acomparison study of factors affecting organisational citizenship behaviour in independent hotels. International Journal of Contemporary Hospitality Management, 32(6), pp. 2055–2074.

72 Koopmans, L., Bernaards, C., Hildebrandt, V., van Buuren, S., van der Beek, A. J., de Vet, H. C. W. (2012). Development of an individual work performance questionnaire. International Journal of Productivity and Performance Management, 62(1), pp. 6–28.

73 Arab, H. R., Atan, T. (2018). Organizational justice and work outcomes in the Kurdistan Region of Iraq. Management Decision.

74 Sembiring, N., Nimran, U., Astuti, E. S., Utami, H. N. (2020). The effects of emotional intelligence and organizational justice on job satisfaction, caring climate, and criminal investigation officers' performance. International Journal of Organizational Analysis, 28(5), pp. 1113–1130.

75 Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4), pp. 542–559.

performance or the adeptness with which individuals in the workplace execute fundamental or technical duties.[76] Research has established that job performance includes not just task performance but also surroundings and counterproductive work behaviour.[77,78] Performance in the context refers to actions that facilitate achieving an organization's social, psychological, and organizational objectives within which the technological core operates.[79] The income, career opportunities, psychological requirements, and well-being of individuals are significantly influenced by their job performance.[80] According to Guo et al. (2016),[81] there is a correlation between employees' levels of alienation and the variety of jobs assigned to them, as well as the social behavior and culture of the business.

1.5 The impact of organizational justice on Job performance

"Organizational justice" has been recognized as a crucial element in driving employee motivation and, thus, may play a significant role in establishing a competitive advantage within the service sector. Research indicates that the lack of justice within an organization may lead to detrimental consequences such as employee fatigue, the expression of negative emotions, inappropriate behavior, and poor performance.[82] Research indicates that a lack of organizational justice in the workplace can lead to undesirable outcomes such as fatigue and an increase in negative emotions and behaviors among employees, including poor performance.[83] Organizational justice is a critical feature inside organizations that significantly influences JP.[84]

Various prior research studies have been undertaken to examine the impact of OJ on performance.[85,86,87,88] Their study findings established that organizational justice exerts a substantial impact on performance. According to Suliman's

76 Campbell, J. P., McHenry, J. J., Wise, L. L. (1990). Modeling job performance in a population of jobs. Personnel Psychology, 43(2), pp. 313–575.

77 Begley, T. M., Lee, C., Fang, Y., Li, J. (2002). Power distance as a moderator of the relationship between justice and employee outcomes in a sample of Chinese employees. Journal of Managerial Psychology, 17(8), pp. 692–711.

78 Rotundo, M., Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. Journal of Applied Psychology, 87(1), pp. 66–80.

79 Zhang, J., Harjan, S. (2021). Investigating the effect of the social customer relationship management (CRM) on customers and financial performance: Evidence from Iraq. International Journal of Research in Business and Social Science (2147-4478), 10(1), pp. 235–245.

80 Xia, C., Xu, J., Cheng, J., Hou, Y. (2024). The impact of information overload on the information avoidance of medical staff: The moderating and mediating roles of job performance and time pressure. Computers in Human Behavior Reports, 16, 100474.

81 Guo, W., Dai, R., Yang, J. (2016). The effect of leadership task behavior and relational behavior on job performance: Investigating the moderating role of work alienation. Journal of Service Science and Management, 9(2), pp. 97–110.

82 Greenberg, J. (2007). The top ten reasons why everyone should know about, and study, organisational justice.

83 Ibid.

84 Sembiring, N., Nimran, U., Astuti, E. S., Utami, H. N. (2020). The effects of emotional intelligence and organizational justice on job satisfaction, caring climate, and criminal investigation officers' performance. International Journal of Organizational Analysis, 28(5), pp. 1113–1130.

85 Arab, H. R., Atan, T. (2018). Organizational justice and work outcomes in the Kurdistan Region of Iraq. Management Decision.

86 Imamoglu, S. Z., Ince, H., Turkcan, H., Atakay, B. (2019). The Effect of Organizational Justice and Organizational Commitment on Knowledge Sharing and Firm Performance. Procedia Computer Science, 158, pp. 899–906.

87 Rauf, A., Mahmood, H., Naveed, R. T., Yen, Y. Y. (2024). Modeling cynicism and organizational design on job performance: Mediation and moderation mechanism. Heliyon, 10(11), e32069.

88 Sembiring, N., Nimran, U., Astuti, E. S., Utami, H. N. (2020). The effects of emotional intelligence and organizational justice on job satisfaction, caring climate, and criminal investigation officers' performance. International Journal of Organizational Analysis, 28(5), pp. 1113–1130.

and Kathairi's (2013)[89] study, it was shown that organizational justice does not have a substantial impact on employee performance. Additionally, people in the firm do not see justice as a determining factor for their performance.

H1: OJ has a significant Impact on JP among bank employees.

1.6 The impact of organizational justice on organizational commitment

One of the extensively studied linkages in management literature is the link between organizational justice and organizational commitment within the framework of social exchange theories. Based on SET, the norm of reciprocity suggests that employees are likely to respond to excellent or fair treatment from the organization or its management by demonstrating commitment to the organization.[90] OJ and OC are strongly interconnected and are often seen as indications of a social interaction.[91] Research on organizational justice often aims to determine its effects on other performance-influencing variables, such as employee commitment and work satisfaction, and staff members of the fairness of their treatment inside the organization.[92] It has been recognized as a crucial element in incentivizing individuals to succeed.[93] It may, therefore, be essential in establishing a competitive advantage in the field of service.[94] Consistent with this approach, research has generally shown that there is a positive relationship between organizational justice and organizational commitment.[95,96,97]

H2: OJ has a significant Impact on OC among bank employees.

1.7 The impact of organizational commitment on Job Performance

Organizational commitment enhances operations by influencing the work performance of individuals in different sectors.[98] Organizational commitment is a crucial aspect in improving workers' performance to deliver optimal service in accordance with customers' needs.[99,100] Organizational commitment enhances organizations by influencing employees' job performance at all levels

89 Suliman, A., Kathairi, M. Al. (2013). Organizational justice, commitment and performance in developing countries: The case of the UAE. Employee Relations, 35(1), pp. 98–115.

90 Khaola, P., Coldwell, D. (2019). Explaining how leadership and justice influence employee innovative behaviours. European Journal of Innovation Management, 22(1), pp. 193–212.

91 Colquitt, J. A., Scott, B. A., Rodell, J. B., Long, D. M., Zapata, C. P., Conlon, D. E., Wesson, M. J. (2013). Justice at the millennium, a decade later: A meta-analytic test of social exchange and affect-based perspectives. Journal of Applied Psychology, 98(2), pp. 199–236.

92 Cohen-Charash, Y., Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. Organizational Behavior and Human Decision Processes, 86(2), pp. 278–321.

93 Jameel, A. S., Mahmood, Y. N., Jwmaa, S. J. (2020). Organizational Justice and Organizational Commitment among Secondary School teachers. Cihan University-Erbil Journal of Humanities and Social Sciences, 4(1), pp. 1–6.

94 Salam, A. (2020). Organizational justice as a predictor of organizational citizenship behaviour. International Business Education Journal, 13, pp. 29–42.

95 Boateng, F. D., Hsieh, M. L. (2019). Explaining Job Satisfaction and Commitment Among Prison Officers: The Role of Organizational Justice. Prison Journal, 99(2), pp. 172–193.

96 Estreder, Y., Tomás, I., Chambel, M. J., Ramos, J. (2019). Psychological contract and attitudinal outcomes: multilevel mediation model. Personnel Review, 48(7), pp. 1685–1700.

97 Imamoglu, S. Z., Ince, H., Turkcan, H., Atakay, B. (2019). The Effect of Organizational Justice and Organizational Commitment on Knowledge Sharing and Firm Performance. Procedia Computer Science, 158, pp. 899–906.

98 Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903.

99 Abdullah, H. O., Al-Abrrow, H. (2023). Impact of perceived organisational justice, support and identity on workplace behaviour through job attitudes: verification in the role of LOC. International Journal of Organizational Analysis, 31(6), pp. 2645–2664.

100 Karem, M. A., Mahmood, Y. N., Jameel, A. S., Ahmad, A. R. (2019). The Effect of Job Satisfaction and Organizational Commitment on Nurses' Performance. Humanities and Social Sciences Reviews, 7(6), pp. 332–339.

in the finance, insurance, and health sectors.[101,102] Arasanmi and Krishna (2019)[103] identified organizational commitment as key to increasing staff performance. Considering the fact that employee commitment to the organization correlates with job performance. Researchers have utilized several approaches to demonstrate a relationship between organizational commitment and job performance.[104,105] Previous research has indicated a negative impact of organizational commitment on job performance.[106,107]

H3: OC has a significant Impact on OC among bank employees.

1.8 The mediating role of organizational commitment

Individuals who consider decision-making procedures as unjust are anticipated to exhibit diminished organizational commitment and a decrease in their involvement in OC.[108] Organizational commitment mediates the relationship between the work environment and employee retention.[109] According to Swalhi et al. (2017),[110] effective commitment mediated the relationship between organizational justice and work performance among the SMEs. Organizational commitment was examined as a mediator between workplace spirituality and organizational performance, and the result reported that organizational commitment can play an important role as a mediator in the context of several industrial sectors in India.[111] a study conducted among hotel employees and choosing organizational commitment as a mediator between training and development, career development, and work performance, the findings showed organizational commitment significantly mediated the relationship among the mentioned variables (see Figure 1).[112]

H4: OC mediates the relationship between OJ and JP among bank employees.

101 Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903.

102 Kumar Piaralal, N., Mat, N., Kumar Piaralal, S., Awais Bhatti, M. (2014). Human resource management factors and service recovery performance in Malaysian life insurance industry. European Journal of Training and Development, 38(6), pp. 524–552.

103 Arasanmi, C. N., Krishna, A. (2019). Employer branding: perceived organisational support and employee retention – the mediating role of organisational commitment. Industrial and Commercial Training, 51(3), pp. 174–183.

104 Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903.

105 Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4), pp. 542–559.

106 Murdayanti, Y., Indriani, S., Umaimah, W. (2020). Determinants of participative budgeting and its implication on managerial performance. Accounting, pp. 1305–1312

107 Yiing, L. H., Zaman, K., Ahmad, B., Yiing, L. H., Zaman, K., Ahmad, B. (2009). The moderating effects of organizational culture on the relationships between leadership behaviour and organizational commitment and between organizational commitment and job satisfaction and performance.

108 Jameel, A. S., Ahmad, A. R., Mousa, T. S. (2020). Organizational justice and job performance of academic staff at public universities in Iraq. Skyline Business Journal, 16(1).

109 Arasanmi, C. N., Krishna, A. (2019). Employer branding: perceived organisational support and employee retention – the mediating role of organisational commitment. Industrial and Commercial Training, 51(3), pp. 174–183.

110 Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4), pp. 542–559.

111 Garg, N. (2017). Workplace Spirituality and Organizational Performance in Indian Context: Mediating Effect of Organizational Commitment, Work Motivation and Employee Engagement. South Asian Journal of Human Resources Management, 4(2), pp. 191–211.

112 Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903.

2. METHODOLOGY

The study deployed the cross-sectional survey approach to examine the proposed hypotheses. The purpose of this work is to examine the mediating role of OC between OJ and JP in the context of the bank sector. The target population of this study is the employees of private banks located in the capital city of Iraq. Employees from five private banks represented the study sample; before beginning to collect the data, the researcher explained to the human resource department in each bank the purpose of this study and asked them for permission to collect the data. The study used a quantitative approach to collect data from private banks, using a self-administered questionnaire. The bank's employees from different levels, such as managers, admins of the system and database, network officers, and information security officers, participants in this study. 281 valid questionnaires were analyzed in this study using SPSS and Smart-PLS, which is considered a premier software package for "partial least squares structural equation modeling" (PLS-SEM).[113] PLS-SEM, which emphasizes data prediction and is well-suited for explanatory models, is excellent for investigations that attempt to predict and elucidate outcome constructs.[114] It is also observed that PLS-SEM can be utilized to evaluate causal relationships in investigations characterized by limited sample sizes and insufficient theoretical backing.

According to Herath and Rao (2009),[115] using validated instruments from previous work ensures the reliability of findings. The current study adapted the research items from earlier work to enhance the reliability of the results and reduce the issues related to reliability and validity. Table 1 shows the number of items and sources of each factor. The questionnaire was sent to four experts in the fields of business administration, human resources, and organization theory to assess its structure and questions; based on the experts' feedback, some items have been reworded and modified. The questionnaire used a five-point Likert scale from "1 (strongly disagree) to 5 (strongly agree)".

3. RESULTS

The demographic information depicted in Table 2 shows that the majority of employees are men, 73%, and 27% are women, and this reflects

113 Ringle, C. M., Wende, S., Becker, J.-M. (2015). SmartPLS 3. Boenningstedt: SmartPLS GmbH.

114 Hair, J. F., Risher, J. J., Sarstedt, M., Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), pp. 2–24.

115 Herath, T., Rao, H. R. (2009). Encouraging information security behaviors in organizations: Role of penalties, pressures and perceived effectiveness. Decision Support Systems, 47(2), pp. 154–165.

FIGURE 1. THE CONCEPTUAL MODEL

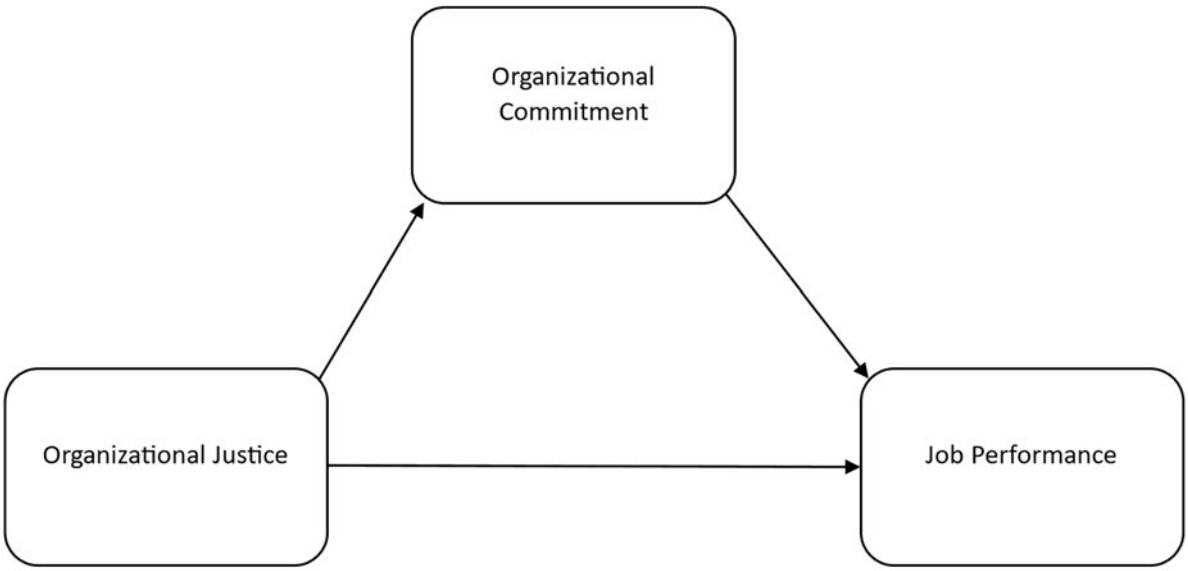


TABLE 1. INSTRUMENTS SOURCES

FACTORS	NUMBER OF ITEMS	SOURCES
organizational Justice	7	(Hosen et al., 2024) (Nazarian et al., 2020)
organizational commitmen	6	(Hosen et al., 2024)(Brefo-Manuh & Anlesinya, 2023),
Job Performance	6	(Hosen et al., 2024)

TABLE 2. DEMOGRAPHIC INFORMATION

LABEL		NO.	PERCENT %
Gender	Men	205	73%
	Women	76	27%
	Total	281	100%
Age	Less 24	0	0%
	25–35	25	9%
	36–45	144	51%
	46–55	82	29%
	Above 56 years	30	11%
	Total	281	100%
Education	Diploma	35	12%
	Bachelor	210	75%
	Master	27	10%
	PhD	9	3%
	Total	281	100%
Work experience	5–10	117	42%
	11–15	89	32%
	16–20	63	22%
	More then 21	12	4%
	Total	281	100%

the culture of the Governorate. Most of the employees were between 36 and 45 years old, 51%. Most of the employees hold bachelor's degrees (75%), and working experience shows that most of the employees have between 5 to 10 years of experience (42%). Close to this, 32% have between 11 and 15 years of experience. Table 2 shows all the demographic information in detail.

The data analyzed by Smart-PLS in this software should be conducted in two main runs. The first one should be a measurement model to examine reliability, validity, and convergent validity. The outer loading is the first indicator assessed to measure the model's validity. Hair et al. (2019),[116] indicated that the values of each loading should be 0.708 and above are recommended. The results are shown in Table 3 and Figure 2. All the loadings above 0.708, except JP3, JP4, OC4, and OJ1, were lower than 0.70 and thus

116 Hair, J. F., Risher, J. J., Sarstedt, M., Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), pp. 2–24.

removed from the model to enhance the model's validity.

The reliability is assessed by Cronbach's alpha and "Composite reliability" (CR) to confirm the internal consistency of each factor. The values should be 0.70 and above (Hair et al., 2019).[117] The values, as shown in Table 3, are all above the recommended value; thus, the model is reliable. The "Average variance extracted" (AVE) is assessed to examine the variance of factor items. The recommended AVE is 0.50 and above, which means that at least the factor explains 50 per cent of the variance, and it is the items. The value of each factor shown in Table 3 is between 0.604 OJ and 0.713 JP; thus, there is no issue with convergent validity.

Discriminant validity

The purpose of this step is to measure how empirically each factor is different from another factor in the proposed model. Fornell and Larcker (1981)[118] according to this criterion, each factor AVE should correlate with the same factor higher than another factor. Table 4 shows that each factor correlated with itself higher than others in columns and rows, with the value highlighted in bold font.

Henseler et al. (2015)"mendeley":{"formattedCitation":"(Henseler et al., 2015[119] criticism of the previous methods and replacement with "heterotrait-monotrait" (HTMT) indicated if the HTMT value should be less than 0.9 and if the value is higher than 0.9, there is an issue in discriminant validity based on Table 5, all the HTMT values above 0.9, thus no issue in model discriminant.

The second main step after assessing the measurement model is to use structural models to examine the proposed hypotheses. The first criterion in this step is to determine the collinearity of the model to ensure there are no biased results in the proposed model by VIF, According to Hair et al. (2019),[120] if the VIF values are above 5, this indicates there are issues in the collinearity among the model factors and the best value of VIF 3 and lower according to Table 6 all the VIF values between 1.662 OJ7 and OC5 3.713 which are less than 5 and most of the VIF value close to 3 and lower

117 Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), pp. 2–24.

118 Fornell, C., Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 18(1), p. 39.

119 Henseler, J., Ringle, C. M., Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), pp. 115–135.

120 Hair, J. F., Risher, J. J., Sarstedt, M., Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), pp. 2–24.

TABLE 3. VALIDITY AND RELIABILITY

FACTORS	CODE	OUTER LOADINGS	CRONBACH'S ALPHA	CR	AVE
Job Performance	JP1 JP2 JP5 JP6	0.794 0.842 0.847 0.893	0.908	0.909	0.713
Organizational Commitment	OC1 OC2 OC3 OC5 OC6	0.788 0.800 0.863 0.828 0.811	0.910	0.910	0.670
Organizational Justice	OJ2 OJ3 OJ4 OJ5 OJ6 OJ7	0.774 0.781 0.730 0.736 0.778 0.859	0.903	0.901	0.604

TABLE 4. FORNELL-LARCKER CRITERION

FACTORS	JP	OC	OJ
JP	**0.845**		
OC	0.775	**0.818**	
OJ	0.587	0.586	**0.777**

Note: OJ: Organizational justice; JP: Job performance; OC: Organizational commitment

TABLE 5. HTMT

PATH	HETEROTRAIT-MONOTRAIT RATIO (HTMT)
OC <-> JP	0.776
OJ <-> JP	0.585
OJ <-> OC	0.584

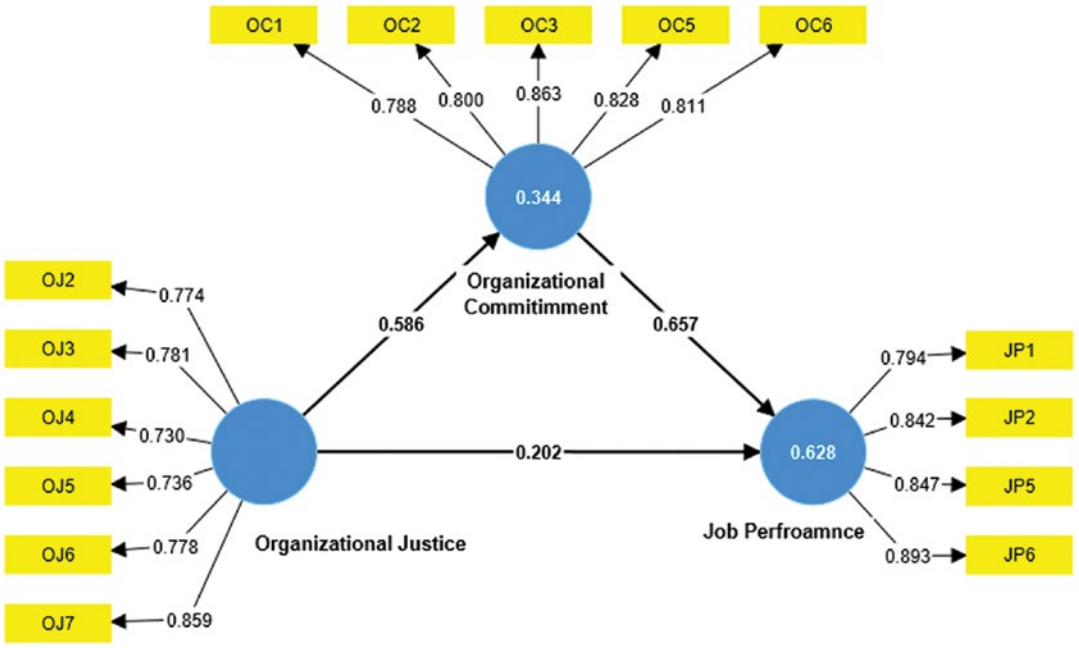
Note: OJ: Organizational justice; JP: Job performance; OC: Organizational commitment

thus, there is no issue in model collinearity.

TABLE 6. VIF

ITEMS	VIF
JP1	2.096
JP2	2.700
JP5	3.480
JP6	3.268
OC1	1.791
OC2	3.118

FIGURE 2. MEASUREMENT MODEL



OC3	3.463
OC5	3.713
OC6	3.108
OJ2	2.561
OJ3	2.446
OJ4	2.330
OJ5	2.287
OJ6	2.520
OJ7	1.662

After ensuring there are no issues in the model collinearity, the next step is to assess the coefficient of determination (R2) to measure the variance between the independent variables (IV) and dependent variable (DV) and examine the proposed model's explanatory power. According to Hair et al. (2019),[121] the R2 values between 0.50 and 0.75 are moderate based on Figure 2 and Figure 3. The R2 of the current model is 0.628; thus, the R2 explains 62% between the IV and DV.

The next criterion is to find the effect size F2 to measure the level of the IV's effect on DV. According to Cohen (1988),[122] if the F2 is above 0.35, the effect is large; if it is between 0.15 and 0.35, the effect is medium; when the F2 is between 0.02 and 0.15, it is small; and if it is less than 0.02, there is no effect. Based on Table 7, the effect size of OC on JP and OJ on OC is 0.760 and 0.524, respectively, large, and the effect size of OJ on JP is 0.072, which is small.

TABLE 7. EFFECT SIZE (F2)

PATH	F2 VALUE	DECISION
OC – > JP	0.760	large
OJ – > JP	0.072	small
OJ – > OC	0.524	large

Note: OJ: Organizational Justice; JP: Job Performance; OC: Organizational commitment

The main analysis was run by bootstrapping with a 50000 subsample as recommended by Hair et al. (2019)[123] to reduce the error; the hypothesis results are reported in Table 8 and depicted in Figure 2. The direct effect proposed three hypotheses. All the proposed direct effect hypotheses are supported due to the T-statistics >1.96 and the P-value <0.05. The results indicate that OJ has a positive and significant impact on JP and OC. The p-value is 0.07 and 0.00 <0.05, respectively, and the T-statistics are 2.707 and 10.433 >1.96; thus, H1 and H2 are supported. Similarly, OC has a significant impact on JP with the p-value of 0.00 and the <0.05 and the 9.312 >1.96; therefore, H3 was supported.

The indirect effect showed that OC mediated the relationship between OJ and JP, with a p-value of 0.00 >0.05 and T-statistics of 6.534 >1.96; thus, H4 was supported.

4. DISCUSSION

Dedication is usually inherent among employees in a job. The HR occasionally seeks to assess commitment. The HR typically assesses aspects including motivation, organizational procedures and policies, work environment, and superior-subordinate interactions, while the current study measured the mediating role of OC between the OJ and JP in the context of Iraq.

The current study reported that OJ significantly increased the JP; this result is in line with several previous studies' results.[124,125,126] Organizational justice has a pivotal role in management directives. This indicates that for leaders to effectively realize their goal of exceeding performance standards, it is crucial to cultivate and maintain an objective perception of fairness in workplace

121 Ibid.

122 Cohen, J. (1988). Statistical power analysis for the behavioral sciences. Academic press.

123 Hair, J. F., Risher, J. J., Sarstedt, M., Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), pp. 2–24.

124 Arab, H. R., Atan, T. (2018). Organizational justice and work outcomes in the Kurdistan Region of Iraq. Management Decision.

125 Imamoglu, S. Z., Ince, H., Turkcan, H., Atakay, B. (2019). The Effect of Organizational Justice and Organizational Commitment on Knowledge Sharing and Firm Performance. Procedia Computer Science, 158, pp. 899–906.

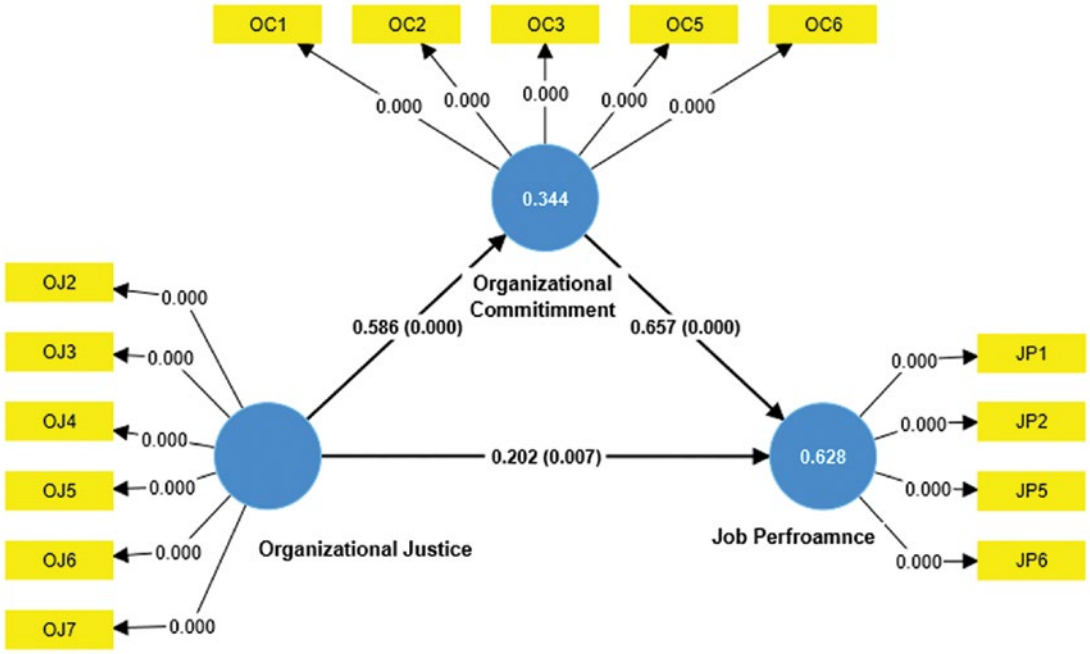
126 Rauf, A., Mahmood, H., Naveed, R. T., Yen, Y. Y. (2024). Modeling cynicism and organizational design on job performance: Mediation and moderation mechanism. Heliyon, 10(11), e32069.

TABLE 8. HYPOTHESES RESULTS

H	PATH	ORIGINAL SAMPLE	SAMPLE MEAN	STANDARD DEVIATION	T STATISTICS	P VALUES	DECISION
H1	OJ -> JP	0.202	0.202	0.075	2.707	0.007	supported
H2	OJ -> OC	0.586	0.586	0.056	10.433	0.000	supported
H3	OC -> JP	0.657	0.657	0.071	9.312	0.000	supported
	Specific indirect effects						
H4	OJ -> OC -> JP	0.385	0.386	0.059	6.534	0.000	supported

Note: OJ: Organizational Justice; JP: Job Performance; OC: Organizational commitment

FIGURE 3. STRUCTURAL MODEL



processes and treatment among organizational members. This implies that firm personnel must be prepared to exert additional effort to attain the organization's objectives, provided they cultivate and maintain a long-term perspective. Organizational justice can impact performance; hence, managers' non-discriminatory attitudes in communication and interaction with employees can enhance work performance. The findings suggest that perceptions of justice influence employees' propensity to reciprocate with enhanced performance and increased organizational commitment. According to the results presented here, individuals in Iraq place a higher value on the justice they receive from their supervisors and organizational representatives during processes and decision-making. According to the findings, the most important factors in recruiting high-performing and committed workers in Iraq are support, dignity, respect, and honesty.

OJ shown in this study, significantly improved the OC; similar findings were reported in previous

research.[127,128,129] The results indicate that respondents saw justice as a crucial element of organizational commitment. Ensuring that awards are equitable and transparent enhances the reputation of the business and its executives. A primary cause of discontent in many firms is employees' perception of inequitable compensation allocation. The perception of equitable procedures reinforces the concept of just organizational practices and value systems. The foundational work suggests that managers should include adequate objectivity in rewards, potentially minimizing managerial discretion to secure employee commitment. This means the employees who recognized higher levels of justice in the workplace were more inclined to indicate increased levels of commitment. When employees see the justice for promotion, salary augmentation, transfer, termination, reward, and punishment as equitable, they are more inclined to willingly accept the judgments, regardless of whether the outcomes are advantageous. Employees who cultivate robust connections with the organization exhibit heightened commitment and concurrently get satisfaction from their profession.

OC has a significant effect on JP. This result is consistent with previous results.[130,131] The results indicate that employees committed to their organizations demonstrate conduct that benefits the organization. Consequently, ensuring that individuals inside organizations experience a sense of devotion to the organization is essential. This fosters a sense of belonging among employees, motivating them to enhance the organization's market position. Given that the organization's greatest asset is its personnel, any actions taken by them for the organization's advantage would improve its worth. The study suggests that Banks in Iraq should enhance employee commitment. When employees are committed, their performance will improve and increase. The managers must cultivate a culture of good connections in the workplace to increase employee commitment. This will encourage employees' emotional commitment to their workplace, hence improving their inventive problem-solving capabilities.

The findings indicated a substantial mediating effect of organizational commitment on the connection between organizational justice and job performance among bank staff. The findings of this study are aligned with those of prior research[132,133,134] who reported similar findings. This study strengthens the legitimacy of prevalent ideas and certain academic results that employee commitment significantly promotes voluntary activities and fosters good perceptions of organizational justice and performance.[135,136] Consequently,

127 Boateng, F. D., Hsieh, M. L. (2019). Explaining Job Satisfaction and Commitment Among Prison Officers: The Role of Organizational Justice. Prison Journal, 99(2), pp. 172–193.

128 Estreder, Y., Tomás, I., Chambel, M. J., Ramos, J. (2019). Psychological contract and attitudinal outcomes: multilevel mediation model. Personnel Review, 48(7), pp. 1685–1700.

129 Khaola, P., Coldwell, D. (2019). Explaining how leadership and justice influence employee innovative behaviours. European Journal of Innovation Management, 22(1), pp. 193–212.

130 Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903.

131 Imamoglu, S. Z., Ince, H., Turkcan, H., Atakay, B. (2019). The Effect of Organizational Justice and Organizational Commitment on Knowledge Sharing and Firm Performance. Procedia Computer Science, 158, pp. 899–906.

132 Arasanmi, C. N., Krishna, A. (2019). Employer branding: perceived organisational support and employee retention – the mediating role of organisational commitment. Industrial and Commercial Training, 51(3), pp. 174–183.

133 Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903.

134 Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4), pp. 542–559.

135 Begley, T. M., Lee, C., Fang, Y., Li, J. (2002). Power distance as a moderator of the relationship between justice and employee outcomes in a sample of Chinese employees. Journal of Managerial Psychology, 17(8), pp. 692–711.

136 Brockner, J., Ackerman, G., Greenberg, J., Gelfand, M. J., Francesco, A. M., Chen, Z. X., Leung, K., Bierbrauer, G., Gomez, C., Kirkman, B. L., Shapiro, D. (2001). Culture and Procedural Justice: The Influence of Power Distance on Reactions to Voice. Journal of Experimental Social Psychology, 37(4), pp. 300–315.

workplace decision-makers seeking to encourage pro-organizational behaviors among workers should provide cognitive and organizational resources to enhance employee commitment to their positions.

5. THEORETICAL CONTRIBUTIONS AND PRACTICAL IMPLICATIONS

This study enhances the theoretical framework within HR, organizational behavior, and psychological research, particularly concerning the Iraqi banking sector. The banking industry in Iraq has a significant power gap, characterized by hierarchical organizational structures where authority is predominantly concentrated in the higher echelons. Employees advocate for justice from the upper echelons to the lower levels. Furthermore, incorporating fairness and equality into performance processes within the banking sector is essential for fostering contented and dedicated bank employees and facilitating favorable banking results. This study investigates the mediating role of organizational commitment in the relationship between organizational justice and job performance, contributing significantly to the literature on performance and organizational justice within a unique environment.

The study advises banking industry managers to provide fairness and justice in the evaluation processes to improve employee commitment. To accomplish this, managers should provide sufficient knowledge of the methods and procedures of work performance exercises, enabling employees to comprehend and feel committed to their roles. During the assessment of job performance, the managers or leaders should pay attention to the employee's respect and dignity; they should ensure justice and equity during the assessment of job performance. Managers must ensure equitable distribution of performance assessment results to foster a sense of responsibility among employees and encourage them to commit more diligently to the bank's best interests.

6. LIMITATIONS AND FUTURE RECOMMENDATIONS

The study has several limitations; nonetheless, it also offers recommendations for future research endeavors. The present study was conducted within Iraq's banking sector, raising concerns regarding generalizability. Consequently, the findings cannot be extrapolated to other sectors. However, this study was performed in the banking industry; thus, the same approach may be utilized in many industries to assess the influence of relationships. Nevertheless, the inclusion of personnel from many industries reveals emerging patterns. The present study examined the influence of organizational commitment as a mediating variable; however, other pertinent aspects, such as organizational citizenship behavior, may affect the link between organizational justice and job performance. It will be intriguing to examine the link using various intervening factors.

CONCLUSION

This study's findings provide new perspectives into the interaction between individuals and the workplace, highlighting the roles of justice views, commitments, and performance. The results of the current study and other empirical research confirmed that a high level of justice and commitment leads to an effective strategy for managers to improve job performance and competitive standing. Consequently, the current results reinforce most of the previous work's conclusion that organizational justice significantly influences individual commitment and performance.

In conclusion, the author advises practitioners and policymakers to focus on behavioral difficulties arising from the intricacies of human and organizational relationships. Establishing equitable and open procedures for resolving human and organizational matters helps enhance employee trust in the organizational procedures and systems.

BIBLIOGRAPHY:

1. Abdullah, H. O., Al-Abrrow, H. (2023). Impact of perceived organisational justice, support and identity on workplace behaviour through job attitudes: verification in the role of LOC. International Journal of Organizational Analysis, 31(6). Available at: <https://doi.org/10.1108/IJOA-01-2022-3099>;
2. Adams, J. S. (1965). Inequity In Social Exchange. Advances in Experimental Social Psychology. Available at: <https://doi.org/10.1016/S0065-2601(08)60108-2>;
3. Allen, N. J., Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. Journal of Vocational Behavior, 49(3);
4. Ambrose, M. L., Schminke, M. (2009). The role of overall justice judgments in organizational justice research: A test of mediation. Journal of Applied Psychology, 94(2). Available at: <https://doi.org/10.1037/a0013203>;
5. Arab, H. R., Atan, T. (2018). Organizational justice and work outcomes in the Kurdistan Region of Iraq. Management Decision. Available at: <https://doi.org/10.1108/MD-04-2017-0405>;
6. Arasanmi, C. N., Krishna, A. (2019). Employer branding: perceived organisational support and employee retention – the mediating role of organisational commitment. Industrial and Commercial Training, 51(3). Available at: <https://doi.org/10.1108/ICT-10-2018-0086>;
7. Aryee, S., Walumbwa, F. O., Mondejar, R., Chu, C. W. L. (2015). Accounting for the Influence of Overall Justice on Job Performance: Integrating Self-Determination and Social Exchange Theories. Journal of Management Studies, 52(2). Available at: <https://doi.org/10.1111/joms.12067>;
8. Begley, T. M., Lee, C., Fang, Y., Li, J. (2002). Power distance as a moderator of the relationship between justice and employee outcomes in a sample of Chinese employees. Journal of Managerial Psychology, 17(8). Available at: <https://doi.org/10.1108/02683940210450493>;
9. Bies, R. J. (2001). Interactional (in) justice: The sacred and the profane. Advances in organizational justice/Stanford University Press;
10. Blau, P. (1964). Exchange and power in social life. Wiley;
11. Boateng, F. D., Hsieh, M. L. (2019). Explaining Job Satisfaction and Commitment Among Prison Officers: The Role of Organizational Justice. Prison Journal, 99(2). Available at: <https://doi.org/10.1177/0032885519825491>;
12. Boon, C., Boselie, J. P., Dietz, G. (2005). Commonalities and contradictions in research on human resource management and performance. Human Resource Management, 15(3);
13. Brefo-Manuh, A. B., Anlesinya, A. (2023). Performance appraisal justice and work attitudes of health-care workers in Ghana. European Journal of Training and Development, 47(1/2). Available at: <https://doi.org/10.1108/EJTD-02-2021-0027>;
14. Brockner, J., Ackerman, G., Greenberg, J., Gelfand, M. J., Francesco, A. M., Chen, Z. X., Leung, K., Bierbrauer, G., Gomez, C., Kirkman, B. L., Shapiro, D. (2001). Culture and Procedural Justice: The Influence of Power Distance on Reactions to Voice. Journal of Experimental Social Psychology, 37(4). Available at: <https://doi.org/10.1006/jesp.2000.1451>;
15. Campbell, J. P., McHenry, J. J., Wise, L. L. (1990). Modeling job performance in a population of jobs. Personnel Psychology, 43(2);
16. Cohen-Charash, Y., Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. Organizational Behavior and Human Decision Processes, 86(2). Available at: <https://doi.org/10.1006/obhd.2001.2958>;
17. Cohen, J. (1988). Statistical power analysis for the behavioral sciences. Academic press;
18. Colquitt, J. A., Scott, B. A., Rodell, J. B., Long, D. M., Zapata, C. P., Conlon, D. E., Wesson, M. J. (2013). Justice at the millennium, a decade later: A meta-analytic test of social exchange and affect-based perspectives. Journal of Applied Psychology, 98(2). Available at: <https://doi.org/10.1037/a0031757>;
19. Estreder, Y., Tomás, I., Chambel, M. J., Ramos, J. (2019). Psychological contract and attitudinal outcomes:

multilevel mediation model. Personnel Review, 48(7). Available at: <https://doi.org/10.1108/PR-07-2018-0237c>;

20. Fornell, C., Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 18(1). Available at: <https://doi.org/10.2307/3151312>;
21. Garg, N. (2017). Workplace Spirituality and Organizational Performance in Indian Context: Mediating Effect of Organizational Commitment, Work Motivation and Employee Engagement. South Asian Journal of Human Resources Management, 4(2). Available at: <https://doi.org/10.1177/2322093717736134>;
22. Gill, C. (2018). Don't know, don't care: An exploration of evidence based knowledge and practice in human resource management. Human Resource Management Review, 28(2). Available at: <https://doi.org/10.1016/j.hrmr.2017.06.001>;
23. Gouldner, A. W. (1960). The Norm of Reciprocity: A Preliminary Statement. American Sociological Review, 25(2). Available at: <https://doi.org/10.2307/2092623>;
24. Greenberg, J. and Colquitt, J. (2005). Handbook of Organizational Justice (Lawrence E). Mahwah NJ;
25. Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. Journal of Management, 16(2);
26. Greenberg, J. (2001). Setting the Justice Agenda: Seven Unanswered Questions about "What, Why, and How". Journal of Vocational Behavior, 58(2). Available at: <https://doi.org/10.1006/jvbe.2001.1792>;
27. Greenberg, J. (2007). The top ten reasons why everyone should know about, and study, organisational justice;
28. Greenberg, J., Colquitt, J. A. (2013). Handbook of organizational justice. Psychology Press;
29. Guo, W., Dai, R., Yang, J. (2016). The effect of leadership task behavior and relational behavior on job performance: Investigating the moderating role of work alienation. Journal of Service Science and Management, 9(2);
30. Hair, J. F., Risher, J. J., Sarstedt, M., Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1). Available at: <https://doi.org/10.1108/EBR-11-2018-0203>;
31. Henseler, J., Ringle, C. M., Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1). Available at: <https://doi.org/10.1007/s11747-014-0403-8>;
32. Herath, T., Rao, H. R. (2009). Encouraging information security behaviors in organizations: Role of penalties, pressures and perceived effectiveness. Decision Support Systems, 47(2). Available at: <https://doi.org/10.1016/j.dss.2009.02.005>;
33. Hosen, S., Hamzah, S. R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., Rahman, M. M. (2024). Training & development, career development, and organizational commitment as the predictor of work performance. Heliyon, 10(1), e23903. Available at: <https://doi.org/10.1016/j.heliyon.2023.e23903>;
34. Imamoglu, S. Z., Ince, H., Turkcan, H., Atakay, B. (2019). The Effect of Organizational Justice and Organizational Commitment on Knowledge Sharing and Firm Performance. Procedia Computer Science, 158. Available at: <https://doi.org/10.1016/j.procs.2019.09.129>;
35. J. A.Colquitt. (2001). On the dimensionality of organizational justice: A construct validation of a measure. Journal of Applied Psychology, 68(3);
36. Jameel, A. S., Ahmad, A. R., Mousa, T. S. (2020). Organizational justice and job performance of academic staff at public universities in Iraq. Skyline Business Journal, 16(1). Available at: <https://doi.org/10.37383/SBJ160102>;
37. Jameel, A. S., Mahmood, Y. N., Jwmaa, S. J. (2020). Organizational Justice and Organizational Commitment among Secondary School teachers. Cihan University-Erbil Journal of Humanities and Social Sciences, 4(1). Available at: <https://doi.org/10.24086/cuejhss.vol4n1y2020.pp1-6c>;
38. Jehanzeb, K., Mohanty, J. (2019). The mediating role of organizational commitment between organizational justice and organizational citizenship behavior. Personnel Review, 49(2). Available at: <https://doi.org/10.1108/PR-09-2018-0327>;
39. Jiang, Z. (2015). The relationship between justice and commitment: the moderation of trust. Asia-Pacific

Journal of Business Administration, 7(1). Available at: <https://doi.org/10.1108/APJBA-02-2014-0022>;

40. Jones, D. A., Martens, M. L. (2009). The mediating role of overall fairness and the moderating role of trust certainty in justice–criteria relationships: the formation and use of fairness heuristics in the workplace. Journal of Organizational Behavior, 30(8). Available at: <https://doi.org/10.1002/job.577>;
41. Karem, M. A., Jameel, A. S., Ahmad, A. R. (2019). The Impact of Organizational Justice Dimensions on Organizational Commitment among Bank Employees. International Journal of Psychosocial Rehabilitation, 23(02);
42. Karem, M. A., Mahmood, Y. N., Jameel, A. S., Ahmad, A. R. (2019). The Effect of Job Satisfaction and Organizational Commitment on Nurses' Performance. Humanities and Social Sciences Reviews, 7(6). Available at: <https://doi.org/10.18510/hssr.2019.7658>;
43. Khaola, P., Coldwell, D. (2019). Explaining how leadership and justice influence employee innovative behaviours. European Journal of Innovation Management, 22(1). Available at: <https://doi.org/10.1108/EJIM-08-2017-0103>;
44. Kim, S. H., Laffranchini, G., Jeung, W. (2018). Moderating effect of subordinates' overall justice in the relationship between supervisors' overall justice and supervisors' affective organizational commitment. Journal of Management Development, 37(7). Available at: <https://doi.org/10.1108/JMD-11-2017-0371>;
45. Koopmans, L., Bernaards, C., Hildebrandt, V., van Buuren, S., van der Beek, A. J., de Vet, H. C. W. (2012). Development of an individual work performance questionnaire. International Journal of Productivity and Performance Management, 62(1). Available at: <https://doi.org/10.1108/17410401311285273>;
46. Kumar Piaralal, N., Mat, N., Kumar Piaralal, S., Awais Bhatti, M. (2014). Human resource management factors and service recovery performance in Malaysian life insurance industry. European Journal of Training and Development, 38(6). Available at: <https://doi.org/10.1108/EJTD-07-2013-0078>;
47. Lind, E. A. (2001). Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations (C. Stanford University Press, Stanford (ed.)). Advances in organizational justice/Stanford University Press;
48. Massoudi, A. H., Jameel, A. S., Ahmad, A. R. (2020). Stimulating Organizational Citizenship Behavior by Applying Organizational Commitment and Satisfaction. International Journal of Social Sciences and Economic Review, 02(02). Available at: <https://doi.org/10.36923/ijsser.v2i2.58>;
49. Meyer, J. P., Allen, N. J. (1997). Commitment in the workplace: Theory, research, and application. Sage;
50. Meyer, J. P., Allen, N. J., Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. Journal of Applied Psychology, 78(4). Available at: <https://doi.org/10.1037/0021-9010.78.4.538>;
51. Meyer, J. P., Smith, C. A. (2000). HRM Practices and Organizational Commitment: Test of a Mediation Model. Canadian Journal of Administrative Sciences / Revue Canadienne Des Sciences de l'Administration, 17(4). Available at: <https://doi.org/10.1111/j.1936-4490.2000.tb00231.x>;
52. Murdayanti, Y., Indriani, S., Umaimah, W. (2020). Determinants of participative budgeting and its implication on managerial performance. Accounting. Available at: <https://doi.org/10.5267/j.ac.2020.8.020>;
53. Nazarian, A., Atkinson, P., Foroudi, P., Edirisinghe, D. (2020). Leaders ororganisations? Acomparison study of factors affecting organisational citizenship behaviour in independent hotels. International Journal of Contemporary Hospitality Management, 32(6). Available at: <https://doi.org/10.1108/IJCHM-05-2019-0463>;
54. O'Reilly, C. A., Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. Journal of Applied Psychology, 71(3). Available at: <https://doi.org/10.1037/0021-9010.71.3.492>;
55. Ohana, M., Meyer, M. (2016). Distributive justice and affective commitment in nonprofit organizations. Employee Relations, 38(6). Available at: <https://doi.org/10.1108/ER-10-2015-0197>;
56. Rauf, A., Mahmood, H., Naveed, R. T., Yen, Y. Y. (2024). Modeling cynicism and organizational design on job performance: Mediation and moderation mechanism. Heliyon, 10(11), e32069. Available at: <https://doi.org/10.1016/j.heliyon.2024.e32069>;
57. Ringle, C. M., Wende, S., Becker, J.-M. (2015). SmartPLS 3. Boenningstedt: SmartPLS GmbH;

58. Rotundo, M., Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. Journal of Applied Psychology, 87(1). Available at: <https://doi.org/10.1037/0021-9010.87.1.66>;
59. Salam, A. (2020). Organizational justice as a predictor of organizational citizenship behaviour. International Business Education Journal, 13;
60. Sembiring, N., Nimran, U., Astuti, E. S., Utami, H. N. (2020). The effects of emotional intelligence and organizational justice on job satisfaction, caring climate, and criminal investigation officers' performance. International Journal of Organizational Analysis, 28(5). Available at: <https://doi.org/10.1108/IJOA-10-2019-1908>;
61. Snell, S. A., Shadur, M. A., Wright, P. M. (2005). Human Resources Strategy. In The Blackwell Handbook of Strategic Management. Wiley. Available at: <https://doi.org/10.1111/b.9780631218616.2006.00024.x>;
62. Suliman, A., Kathairi, M. Al. (2013). Organizational justice, commitment and performance in developing countries: The case of the UAE. Employee Relations, 35(1). Available at: <https://doi.org/10.1108/01425451311279438>;
63. Swalhi, A., Zgoulli, S., Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance. Journal of Management Development, 36(4). Available at: <https://doi.org/10.1108/JMD-11-2015-0162>;
64. Wayne, S. J., Shore, L. M., Bommer, W. H., Tetrick, L. E. (2002). The role of fair treatment and rewards in perceptions of organizational support and leader-member exchange. Journal of Applied Psychology, 87(3). Available at: <https://doi.org/10.1037/0021-9010.87.3.590>;
65. Xia, C., Xu, J., Cheng, J., Hou, Y. (2024). The impact of information overload on the information avoidance of medical staff: The moderating and mediating roles of job performance and time pressure. Computers in Human Behavior Reports, 16, 100474. Available at: <https://doi.org/10.1016/j.chbr.2024.100474>;
66. Yiing, L. H., Zaman, K., Ahmad, B., Yiing, L. H., Zaman, K., Ahmad, B. (2009). The moderating effects of organizational culture on the relationships between leadership behaviour and organizational commitment and between organizational commitment and job satisfaction and performance. Available at: <https://doi.org/10.1108/01437730910927106>;
67. Zhang, J., Harjan, S. (2021). Investigating the effect of the social customer relationship management (CRM) on customers and financial performance: Evidence from Iraq. International Journal of Research in Business and Social Science (2147-4478), 10(1).

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BALANCING INNOVATION AND RISK: REGULATORY FRAMEWORKS FOR SUSTAINAB LE FINTECH GROWTH

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Abstract. This paper investigates the transformative impact of Financial Technology (FinTech) and Artificial Intelligence (AI) on the global financial sector, moving beyond a descriptive overview to critically examine the challenges and opportunities they present. The study synthesizes a comprehensive review of empirical data, policy documents, and industry reports, including the EY Global FinTech Adoption Index (2023) and World Bank reports (2023), to analyze FinTech adoption across diverse regions and financial service categories. The research identifies key challenges related to electronic financial transactions, including cross-border complexities, decentralized systems, and cybersecurity risks. Furthermore, it addresses the crucial need for adaptable regulatory frameworks that balance innovation with financial stability and consumer protection. Findings reveal significant disparities in FinTech adoption globally, driven by factors such as technological infrastructure, regulatory environments, and socio-economic conditions. The study highlights the potential systemic risks associated

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with FinTech investments and underscores the importance of international cooperation in addressing cross-border challenges. By providing a holistic perspective that integrates technological, economic, ethical, and regulatory dimensions, this paper contributes to a more nuanced understanding of the dynamic interplay between technology and finance. It offers actionable recommendations for policymakers, industry practitioners, and academics seeking to foster responsible innovation and ensure the long-term resilience of the global financial system. Future research directions are proposed, including evaluating the effectiveness of different regulatory approaches, exploring the ethical dimensions of AI in finance, and conducting longitudinal studies to assess the long-term impacts of FinTech on financial stability and consumer welfare.

KEYWORDS: FINTECH, ARTIFICIAL INTELLIGENCE (AI), FINANCIAL REGULATION, FINANCIAL STABILITY, DIGITAL FINANCE.

INTRODUCTION

The global financial landscape is undergoing a radical transformation, spurred by the accelerating convergence of financial technology (FinTech) and artificial intelligence (AI). This technological revolution transcends simple digitization, fundamentally reshaping established business models and redefining the core functionalities of banking, investment management, and financial transactions. While the proliferation of digital banking services, enhanced by innovations such as real-time payment systems, AI-driven identity verification mechanisms, and round-the-clock chatbot support,[2] has undeniably enhanced customer experiences and improved operational efficiency, it simultaneously raises critical and complex questions. These include concerns regarding equitable financial inclusion, the potential for increased systemic risk, and the imperative of developing adaptive regulatory frameworks to govern these rapidly evolving technologies. Existing research, although valuable, often examines these issues in isolation, failing to capture the intricate interdependencies that characterize the modern FinTech ecosystem.

This paper offers a comprehensive examination of the multi-layered impact of FinTech and AI on the financial sector. Moving beyond a descriptive overview, it provides a rigorous analysis of the primary challenges and opportunities these technologies present. The study leverages a comprehensive review of the most recent empirical data, relevant policy documents, and insightful industry reports, including crucial data from the EY Global FinTech Adoption Index (2023) and pertinent World Bank reports (2023). This data-driven approach allows for a detailed assessment of the factors driving FinTech adoption across diverse geographical regions and within specific financial service categories. Special attention is given to understanding the disparities in adoption rates across developed and developing economies, acknowledging the unique contextual factors that shape the FinTech landscape in each region. Further, the study explores the ethical dimensions of AI in finance, including biases in algorithms and the potential for discriminatory outcomes.

A significant aspect of this research addresses the pressing need for adaptable and effective regulatory frameworks. In this regard, the study undertakes a detailed analysis of the characteristics, associated challenges, and necessary regulatory adaptations related to electronic financial transactions. It delves into the complexities arising from the cross-border nature of these transactions, the decentralization facilitated by blockchain technologies, and the ever-present threat of cybersecurity risks. Moreover, it explores the role of international organizations in establishing global standards and promoting cooperation among regulatory bodies, underscoring the necessity for a coordinated approach to FinTech regulation. The paper emphasizes the crucial balance that must be struck between fostering innovation and safeguarding financial stability, ensuring con-

2 Mbama, C. I., Ezepue, P. O. (2018). Digital banking, customer experience and bank financial performance: UK customers' perceptions. International Journal of Bank Marketing, 36 (2), pp. 230-255.

sumer protection, and promoting ethical behavior in the digital finance space. It challenges the notion that regulation inherently stifles innovation, arguing instead that well-designed regulatory frameworks can create a stable and trustworthy environment that encourages sustainable growth and development in the FinTech sector.

In contrast to existing literature, which often compartmentalizes the analysis of FinTech, this study offers a uniquely holistic perspective that integrates technological, economic, ethical, and regulatory dimensions. By synthesizing diverse strands of research and drawing on a rich dataset, this research provides a more nuanced and comprehensive understanding of the complex dynamics shaping the future of finance. Addressing a gap in the current body of research, this research not only examines the growth in global FinTech investments from 2018 to 2023 but also rigorously analyzes how sector investments influence sector stability and systemic risks. The study's findings are geared towards informing evidence-based policy and promoting responsible innovation in the FinTech arena. The paper seeks to answer the following overarching research questions:

(1) How does the geographic distribution of FinTech adoption vary globally, and what are the key technological, economic, social, and political drivers behind these disparities?

(2) What are the principal challenges posed by electronic financial transactions, particularly in relation to cross-border activities, decentralization, and cybersecurity, and how can these challenges be effectively mitigated through regulatory and technological innovations?

(3) How can regulatory frameworks best balance the promotion of FinTech innovation with the imperative of ensuring financial stability, consumer protection, and ethical behavior, and what are the key principles that should guide the development of such frameworks?

By providing robust empirical analysis and nuanced policy recommendations, this study aims to contribute to a more comprehensive and insightful understanding of the transformative potential and inherent challenges of FinTech and AI in shaping the financial sector's future. The insights gleaned from this research will be highly valuable to academics conducting cutting-edge research, policymakers grappling with complex regulatory challenges, industry practitioners seeking to navigate the evolving FinTech landscape, and anyone with a keen interest in the intricate interplay between technology and finance in the 21st century. Ultimately, the research aspires to contribute to the development of a more inclusive, efficient, and resilient financial system that benefits all stakeholders.

I. LITERATURE REVIEW

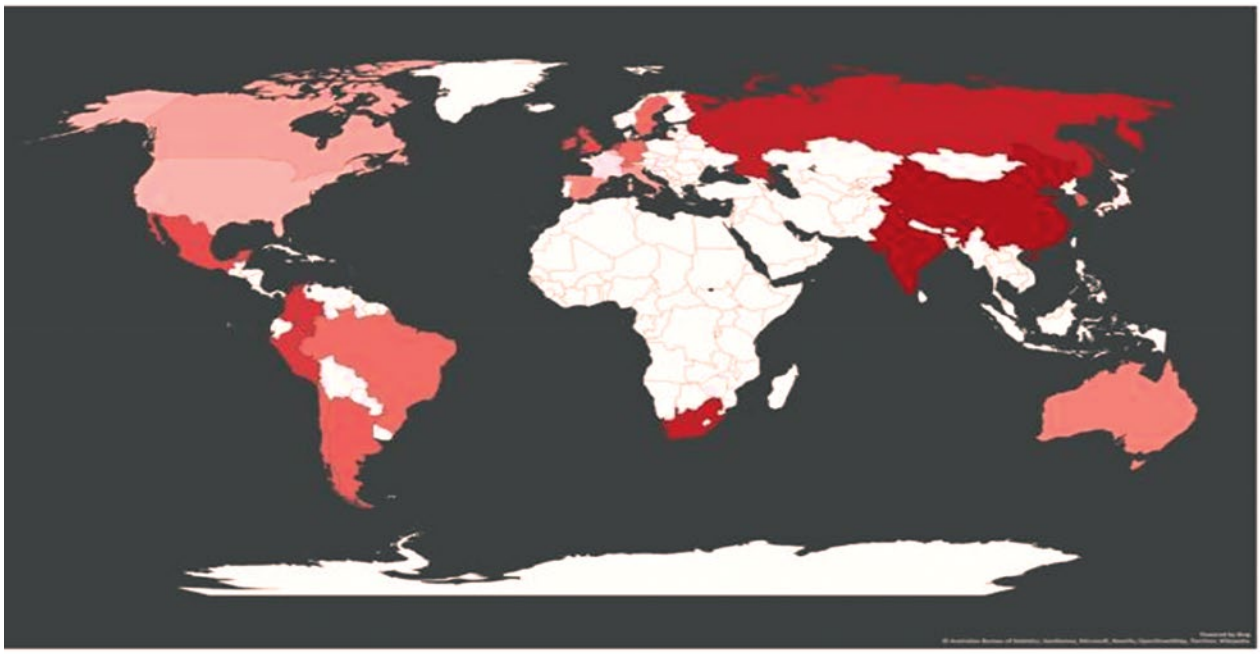
1. The Impact of Fintech and Artificial Intelligence on the Financial Sector

The financial sector has undergone significant transformations in recent years due to innovations in financial technology (Fintech) and artificial intelligence (AI), which have profoundly influenced how banking services, investment management, and financial transactions are conducted. Digital banking services provide a clear example of this transformation, allowing customers to manage most of their banking needs remotely without visiting physical branches. Advanced technologies, such as real-time money transfers, online account opening, identity verification technologies like facial recognition or fingerprint scanning, and 24/7 chatbot services, have enabled banks to significantly enhance customer experience and operational efficiency.[3]

This shift, reflecting the increasing global adoption of Fintech, can be understood through a global heat map illustrating the levels of Fintech penetration in various countries. Regions depicted in warm colors, such as China and India, indicate high rates of Fintech adoption, particularly in areas like electronic payments and online lending. In contrast, other regions appear in cooler tones, signifying lower levels of Fintech adoption. The impacts of technological innovation, demographics, and government policies play a critical role in determining the rates of Fintech penetration. Countries with robust technological infrastructure, such as the United States and the United Kingdom, report high adoption rates, whereas some developing countries, such as Brazil and India, also exhibit high adoption rates due to the

3 Ibid.

FIGURE N°1: GLOBAL HEAT MAP OF FINTECH PENETRATION



Source: EY Global FinTech Adoption Index 2023.
Available at: <https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf>

need to address the demands of the unbanked population.[4]

Asia leads prominently in the adoption of financial technology, driven by the rapid growth of startups in China and India. In Europe, countries such as the United Kingdom and Sweden exhibit high adoption rates, benefiting from innovations in financial sectors. In contrast, Latin America and Africa, despite noticeable growth in some countries like Brazil and South Africa, still face relatively low adoption rates due to challenges related to infrastructure.[5]

The leading sectors in Fintech include electronic payments and online lending, where startups are striving to provide innovative and unconventional solutions. With improvements in infrastructure and the adoption of supportive regulatory policies, regions such as Africa have the potential to experience significant growth in Fintech adoption in the future.[6]

This transformation has also reshaped how individuals and businesses handle finances, with electronic payments enhancing the speed and convenience of financial transactions. These payments include the use of cryptocurrencies, such as Bitcoin and Ethereum, which offer decentralized payment methods, as well as mobile payments through services like Apple Pay and Google Pay. Furthermore, international money transfers have become more cost-effective thanks to companies like TransferWise (now Wise).[7]

Robo-advisors have emerged as one of the most significant innovations in investment management, leveraging advanced algorithms to provide automated and low-cost investment services. These include dynamic asset allocation, which automatically adjusts investment portfolios in response to market changes, and complex investment strategies, such as factor investing, which were previously limited to institutional investors. Additionally, robo-advisors utilize behavioral analytics to understand investor behavior and offer personalized advice, alongside automated portfolio rebalancing to

4 Ibid.

5 Dahlberg, T., Guo, J., Ondrus, J. (2015). A critical review of mobile payment research. Electronic Commerce Research and Applications, 14 (5), pp. 265-284.

6 EY. (2019). EY Global FinTech Adoption Index 2019. Available at: <https://www.ey.com>.

7 Dahlberg, T., Guo, J., Ondrus, J. (2015). A critical review of mobile payment research. Electronic Commerce Research and Applications, 14 (5), pp. 265-284.

maintain target asset allocation.[8]

Similarly, digital insurance has revolutionized the insurance industry by simplifying the process of purchasing and managing insurance policies and improving operational efficiency. Innovations in this field include usage-based insurance, such as car insurance based on driving habits, and automated claims processing using AI to expedite procedures. Instant insurance has also become available, allowing for the purchase of short-term policies like single-day travel insurance, along with the use of big data to enhance risk assessment accuracy.[9]

The data presented highlights a significant transformation in the financial landscape between 2015 and 2019, shedding light on dynamic changes in consumer behavior and the evolution of financial services. The remarkable increase in the use of money transfers and payments, rising from 18% to 75%, reflects the widespread adoption of digital solutions, likely driven by the proliferation of smartphones and electronic payment applications. Parallel to this, the savings and investments sector experienced substantial growth from 17% to 40%, signaling heightened financial awareness and improved accessibility to digital investment tools.

The notable rise in the utilization of budgeting and financial planning services (from 8% to 34%) and insurance (from 8% to 29%) indicates growing interest in personal financial health and risk management. Even the borrowing sector, although the least developed, showed a significant increase from 6% to 27%, potentially reflecting improved access to credit through digital platforms. Collectively, these trends underscore the rapid digitalization of the financial sector, emphasizing the increasing influence of financial technology (FinTech) in shaping consumer behavior and expectations.

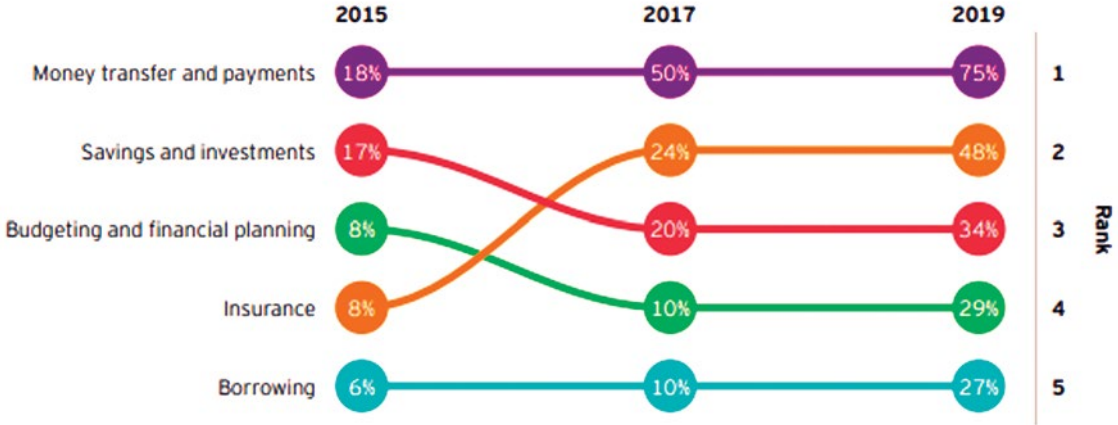
These developments also suggest a potential improvement in financial inclusion, as financial services have become more accessible to a broader segment of the population. This progress paves the way for further innovation and growth in the financial sector in the near future.

These combined innovations have led to notable improvements in the financial sector by enhancing the efficiency of financial transactions through process automation and reducing the

8 Jung, D., Dorner, V., Weinhardt, C., Pusmaz, H. (2018). Designing a robo-advisor for risk-averse, low-budget consumers. Electronic Markets, 28 (3), pp. 367-380.

9 Eling, M., Lehmann, M. (2018). The impact of digitalization on the insurance value chain and the insurability of risks. The Geneva Papers on Risk and Insurance-Issues and Practice, 43 (3), pp. 359-396.

FIGURE N°2: COMPARISON OF FINTECH CATEGORIES BY ADOPTION RATE FROM 2015 TO 2019



Source: EY Global FinTech Adoption Index 2019.
Available at: <https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf>

need for human intervention. This progress has contributed to cost reduction and increased market competition. Furthermore, financial services have become more accessible, particularly for financially marginalized groups in remote areas.[10]

Nevertheless, these advancements come with new challenges, including cybersecurity concerns, privacy issues, and the need for modern regulatory frameworks to keep pace with these rapid changes. Therefore, technological innovation must be accompanied by robust policies and regulations to ensure the sustainability and stability of the financial sector.

2. The Spread of FinTech and the Necessity for Regulatory Frameworks:

Modern financial services are undergoing a revolutionary transformation thanks to the rapid advancement of financial technology (FinTech). This has led to the development of advanced regulatory frameworks to ensure a delicate balance between encouraging innovation, protecting consumers, and ensuring the stability of financial markets. The Payment Services Directive (PSD2) in the European Union serves as a prime example of these advancements. Introduced in 2018, this directive aims to enhance transparency and security in online financial transactions. It provides open access to banking data for licensed third parties, promotes two-factor authentication, and reduces consumer liability in cases of fraud[11].

In the United Kingdom, the Regulatory Sandbox framework provides an innovative environment where FinTech entrepreneurs can test their products and services under regulatory oversight. This approach reduces the time and cost associated with bringing innovations to market and fosters dialogue between innovators and regulators.[12]

Furthermore, advancements in cryptocurrencies and digital assets necessitate updates to anti-money laundering and counter-terrorist financing (AML/CFT) laws. The "Know Your Customer" (KYC) principle is now being applied to cryptocurrency trading platforms, with requirements for reporting suspicious transactions by businesses operating in the digital asset space. These measures aim to combat cross-border financial crimes.[13]

In the United States, the Financial Innovation Act promotes innovation while maintaining consumer protection. Meanwhile, Singapore's FinTech regulatory framework features initiatives like "Sandbox Express" to expedite the testing of innovations.[14] Additionally, crowdfunding regulations in the European Union aim to organize crowdfunding platforms and protect investors, highlighting the importance of balancing innovation with small investor protection.[15]

These regulatory advancements underscore the urgent need for flexible and effective frameworks that align with the rapid evolution of FinTech. In this context, Arner, Barberis, and Buckley emphasize that technology itself (RegTech) can play a pivotal role in improving regulatory compliance and risk management in the FinTech era.[16]

3. Characteristics and Challenges of Electronic Financial Transactions:

Amid significant transformations in the digital world, electronic financial transactions (E-transactions) have become one of the critical pillars of

10 Thakor, A. V. (2020). Fintech and banking: What do we know? Journal of Financial Intermediation, 41, 100833.

11 Donnelly, M. (2016). Payments in the digital market: Evaluating the contribution of Payment Services Directive II. Computer Law & Security Review, 32 (6), pp. 827-839.

12 Jenik, I., Lauer, K. (2017). Regulatory sandboxes and financial inclusion. Washington, DC: CGAP.

13 Houben, R., Snyers, A. (2018). Cryptocurrencies and blockchain: Legal context and implications for financial crime, money laundering and tax evasion. European Parliament's Special Committee on Financial Crimes, Tax Evasion and Tax Avoidance.

14 Barefoot, J. A. (2020). The Future of Financial Regulation: The US Financial Innovation Bill. Journal of Financial Regulation and Compliance, 28 (3), pp. 381-395.

15 Zetzsche, D. A., Preiner, C. (2018). Cross-Border Crowdfunding: Towards a Single Crowdlending and Crowdinvesting Market for Europe. European Business Organization Law Review, 19 (2), pp. 217-251.

16 Arner, D. W., Barberis, J., Buckley, R. P. (2016). FinTech, RegTech, and the reconceptualization of financial regulation. Northwestern Journal of International Law & Business, 37, p. 371.

the global economy. However, these transactions pose various challenges rooted in their fundamental characteristics.

3.1 Cross-Border Nature: E-transactions are characterized by their ability to transcend traditional geographical boundaries, creating a complex legal and regulatory environment. A single transaction may be subject to a variety of laws, potentially leading to conflicts among them, which complicates effective enforcement. For instance, determining tax jurisdiction for cross-border transactions can be challenging, as can addressing variations in consumer protection standards between countries, exposing consumers to differing levels of legal safeguards.[17]

3.2 Decentralization: Blockchain technologies introduce a decentralized model for financial transactions, challenging traditional regulatory models. In this context, traditional oversight becomes difficult due to the absence of a central control point. Additionally, applying KYC principles in such systems becomes more complex, and new challenges emerge in freezing assets or reversing transactions in cases of fraud.[18]

3.3 Cybersecurity Risks: With increasing reliance on technology, e-transactions are vulnerable to a wide range of cybersecurity risks. These include ransomware attacks targeting financial institutions and demanding payment to restore data, as well as advanced fraud techniques leveraging artificial intelligence (AI), which heighten the complexity of required cyber defenses.[19]

3.4 Efforts by International Organizations: International organizations, such as the Financial Action Task Force (FATF), are actively working to establish global standards to address regulatory challenges in the digital age. These efforts include issuing updated recommendations to regulate virtual assets and virtual asset service providers (VASPs), along with enhancing international cooperation among regulatory bodies to ensure consistency across borders.[20]

3.5 Data Privacy: As reliance on collecting and analyzing financial data grows, significant challenges arise regarding consumer privacy protection. Arner, Barberis, and Buckley highlight that FinTech introduces new dimensions to data protection, necessitating the development of regulatory frameworks that consider consumers' rights in this context.[21]

3.6 Financial Inclusion: FinTech contributes to advancing financial inclusion by expanding financial services to marginalized groups. However, these technologies can also create a new digital divide between those with access to technology and those without.[22]

3.7 Regulatory Adaptation: The rapid evolution of FinTech demands the development of flexible regulatory frameworks that adapt to ongoing changes. Zetzsche, Buckley, Arner, and Barberis point out that the main challenge lies in transitioning from traditional regulatory systems to ones capable of managing data-driven finance.[23]

17 Monehin, O., Okeke, J., Aina, O. (2022). Cross-border fintech regulation and regulatory challenges. Journal of Financial Regulation and Compliance, 30(1), pp. 101-118.

18 Chen, Y., Bellavitis, C. (2020). Blockchain disruption and decentralized finance: The rise of decentralized business models. Journal of Business Venturing Insights, 13, e00151.

19 Bouveret, A. (2018). Cyber risk for the financial sector: A framework for quantitative assessment. IMF Working Paper, 18(143).

20 Financial Action Task Force. (2019). Guidance for a risk-based approach to virtual assets and virtual asset service providers. FATF, Paris.

21 Arner, D. W., Barberis, J., Buckley, R. P. (2016). FinTech, RegTech, and the reconceptualization of financial regulation. Northwestern Journal of International Law & Business, 37, p. 371.

22 Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. Borsa Istanbul Review, 18(4), pp. 329-340.

23 Zetzsche, D. A., Buckley, R. P., Arner, D. W., Barberis, J. N. (2017). From FinTech to TechFin: The regulatory challenges of data-driven finance. New York University Journal of Law and Business, 14(2), pp. 393-446.

Addressing these challenges requires a comprehensive approach that strikes a delicate balance between fostering innovation, ensuring financial stability, and protecting consumers. International cooperation among regulators and the private sector is crucial to tackling global challenges posed by e-transactions. Over time, the need for adaptable regulatory frameworks will persist to keep pace with the rapid advancements in FinTech.[24]

4. The Impact of FinTech on Financial Sector Stability: A Comprehensive Analysis of Challenges and Opportunities

The financial sector has undergone a radical transformation with the adoption of financial technology (FinTech), which has become a key tool for restructuring the global financial system. The following data illustrates global growth rates in FinTech investments from 2018 to 2023.

24 Brummer, C., Yadav, Y. (2019). Fintech and the innovation trilemma. Georgetown Law Journal, 107(2), pp. 235-307.

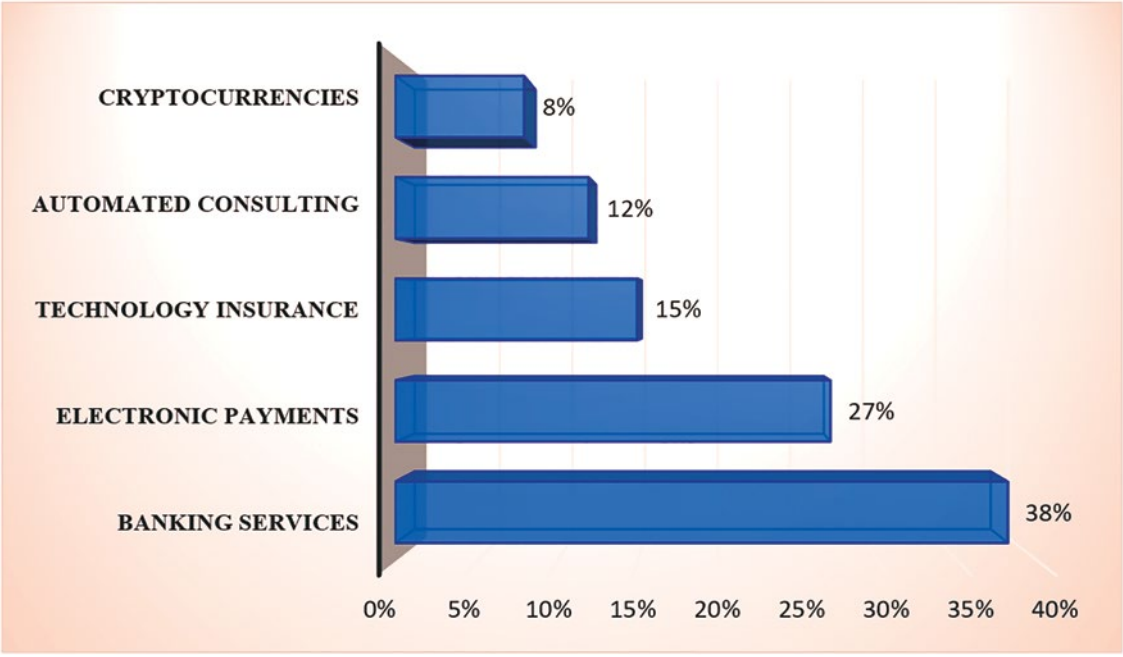
TABLE: GROWTH IN FINTECH INVESTMENTS FROM 2018 TO 2023

YEAR	INVESTMENT VOLUME (BILLION USD)	ANNUAL GROWTH RATE (%)
2018	55.3	15.7%
2019	67.5	22.1%
2020	44.2	-34.5%
2021	102.8	132.6%
2022	164.1	59.6%
2023	196.5	19.7%

Source: EY Global FinTech Adoption Index 2023

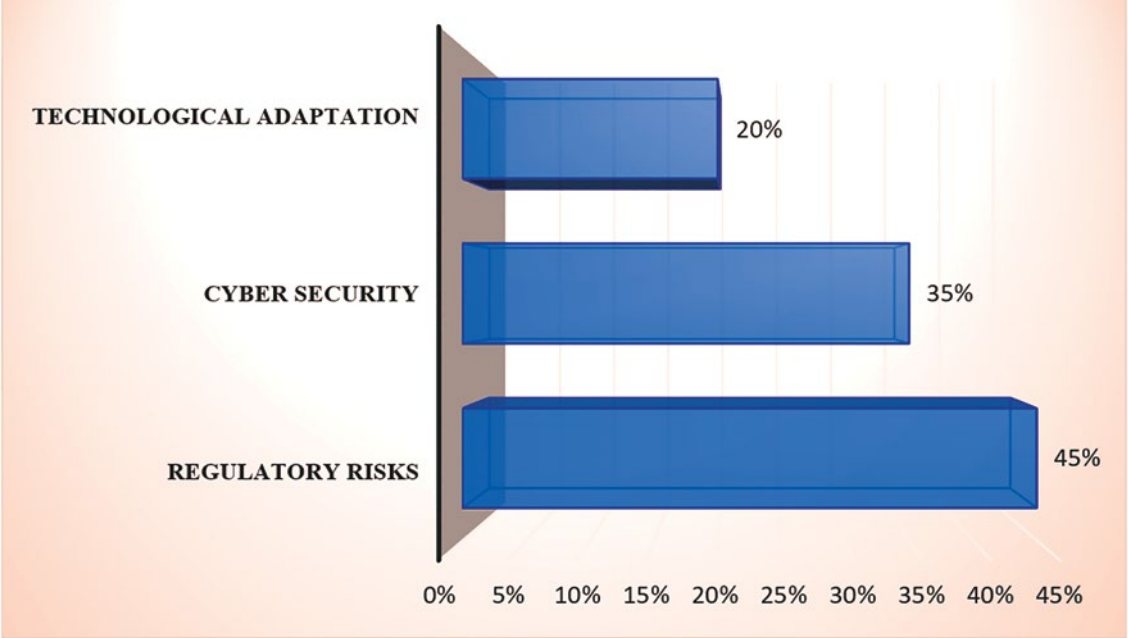
The table shows that investments in FinTech have experienced significant fluctuations in recent years. A major decline occurred in 2020, with a negative growth rate of – 34.5%, attributed to the global economic and financial impact of the COVID-19 pandemic. However, there was a strong recovery in 2021, with a growth rate of 132.6%, driven by the rapid digital transformation necessitated by the pandemic. This momentum continued with high growth rates in subsequent years,

FIGURE N°3: DISTRIBUTION OF FINTECH INVESTMENTS BY SECTOR



Source: Feyen, E., Frost, J., Gambacorta, L., Natarajan, H. (2021). FinTech and the digital transformation of financial services: Implications for market structure and public policy.

FIGURE N°4: KEY CHALLENGES FACING THE FINANCIAL SECTOR



Source: World Bank. (2023). "Key Challenges Facing the Global Financial Sector Amid Digital Transformation". World Bank Report.

reflecting increased confidence in FinTech's ability to reshape the financial sector and achieve long-term gains.

Research by Feyen et al. (2021) highlighted the distribution of FinTech investments across various sectors, as illustrated in the following chart:

The chart reveals that digital banking services and electronic payments dominate the FinTech landscape, accounting for 65% of total investments. This dominance reflects the ongoing transformation of the financial system toward innovation and the adoption of modern technologies. Simultaneously, emerging sectors like InsurTech signify a growing diversification within FinTech, enhancing its ability to offer innovative and comprehensive solutions tailored to diverse market needs.

Despite its benefits, FinTech faces significant challenges that affect financial stability.

The figure identifies key challenges, with regulatory risks being the most critical. Governments and institutions must develop flexible regulatory policies that balance fostering innovation with ensuring compliance. Cybersecurity remains a persistent concern in an increasingly complex digital environment, necessitating global collaboration to address cyberattacks and protect sensitive data. Moreover, technological adaptation poses a fundamental challenge for traditional institutions, requiring significant investments in infrastructure and cultural shifts to remain competitive.

5. Three Main Challenges

5.1 Systemic Risks: FinTech introduces new systemic risks, such as technical failures and

5.2 Cyberattacks. For instance, Knight Capital suffered a $440 million loss within 45 minutes due to a technical glitch in 2012.[25] Similarly, the Bangladesh Central Bank cyberattack in 2016 resulted in an $81 million theft.[26] These incidents demonstrate how technology can increase financial system fragility and expose it to significant risks.

5.3 Changing Market *Dynamics:* The entry of BigTech companies like Google,

25 Knight Capital Group incident: SEC. (2013). Administrative Proceeding File No. 3-15570.

26 IBM. (2021). Cost of a Data Breach Report.

Apple, and Amazon into the financial sector has significantly altered market dynamics. While these companies enhance competition, improving services and reducing costs for consumers,[27] their vast resources could lead to market concentration, reducing competition in the long term and increasing monopoly risks.

5.4 Rapid Crisis Propagation*:* FinTech has accelerated the transmission of financial crises through global interconnectedness. High-frequency trading systems and advanced algorithms can quickly transmit market volatility. Additionally, social media and online trading platforms amplify the spread of news and rumors, heightening market volatility.[28]

6. Regulatory Measures for FinTech

6.1 National FinTech Regulations

By 2020, over 50 countries had developed or were developing national FinTech strategies,[29] reflecting global awareness of the need to regulate FinTech to ensure financial system stability and consumer protection.

6.2 Principles for Effective Regulation

- ***Balancing Innovation and Stability***: Regulatory sandboxes, such as those used by the UK's Financial Conduct Authority,[30] allow companies to test innovative products under controlled environments.
- ***Consumer Protection***: Ensuring transparency in transactions, safeguarding personal data, and increasing consumer awareness are critical to reducing risks associated with digital financial services.[31]
- ***International Cooperation***: Organizations like the Financial Stability Board (FSB) play a pivotal role in coordinating global financial policies to enhance system stability.[32]
- ***Regulatory Flexibility***: Adopting a principles-based regulatory approach allows flexibility and fosters innovation while maintaining oversight.[33]

6.3 *RegTech*

The "Electronic Financial Regulation" (RegTech) represents a significant innovation in the field of financial technology, leveraging technology to enhance compliance and regulatory processes within the financial sector. RegTech aims to simplify and automate regulatory operations, thereby promoting efficiency and transparency. According to a report by Deloitte,[34] the global RegTech market is expected to grow at a compound annual growth rate (CAGR) of 21.27% between 2020 and 2025. This growth reflects the increasing demand for technological solutions that support regulatory compliance within the financial sector.

Consequently, establishing regulations and principles for electronic financial systems is imperative to maximize the benefits of financial technology while mitigating associated risks. This requires a balanced approach that fosters innovation and stability, safeguards consumer rights, enhances international collaboration, and ensures the flexibility of regulatory frameworks to adapt to the rapid changes in this sector.

II. DISCUSSION

The findings of this study provide several important insights into the impact of FinTech and AI on the financial sector. The analysis of FinTech adoption rates across different regions highlights the significant role of technological infrastructure,

27 Bank for International Settlements. (2019). BigTech in finance: opportunities and risks.

28 International Monetary Fund. (2021). The Rise of Digital Money.

29 World Bank Group. (2020). Global Experiences from Regulatory Sandboxes.

30 Financial Conduct Authority UK. (2015). Regulatory Sandbox.

31 OECD. (2018). G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age.

32 Financial Stability Board. (2019). FinTech and market structure in financial services.

33 Bank for International Settlements. (2021). Fintech regulation: how to achieve a level playing field.

34 Deloitte. (2021). RegTech Universe 2021.

regulatory environments, and socio-economic factors in driving the uptake of digital financial services. The observed disparities underscore the need for tailored policy interventions that address the specific needs and challenges of each region. For instance, in developing countries, efforts to improve digital literacy and expand access to internet connectivity are crucial to promote financial inclusion and enable widespread FinTech adoption.

Our examination of electronic financial transactions reveals the persistent challenges associated with cross-border activities, decentralized systems, and cybersecurity threats. The complex legal and regulatory landscape surrounding cross-border transactions requires greater international cooperation and harmonization of regulatory standards. The decentralized nature of blockchain-based systems poses unique challenges for regulatory oversight and consumer protection, necessitating innovative approaches such as the development of regulatory sandboxes and the implementation of smart contracts with embedded compliance mechanisms. The increasing sophistication of cyberattacks highlights the importance of investing in robust cybersecurity measures and fostering collaboration between financial institutions, technology providers, and law enforcement agencies to combat cybercrime.

The study's analysis of FinTech investments and their impact on financial stability sheds light on the potential systemic risks associated with the rapid growth of the FinTech sector. The increasing interconnectedness of financial institutions and FinTech companies creates new channels for the transmission of shocks and vulnerabilities. The entry of BigTech companies into the financial sector also raises concerns about market concentration and the potential for anti-competitive behavior. Effective regulatory oversight is essential to mitigate these risks and ensure that the benefits of FinTech are not outweighed by the potential for financial instability.

III. LIMITATIONS

While this study provides a comprehensive analysis of the impact of FinTech and AI on the financial sector, it is important to acknowledge its limitations. First, the study relies primarily on secondary data sources, such as industry reports, policy documents, and academic publications. While these sources provide valuable insights, they may be subject to biases or limitations in data availability. Future research should consider collecting primary data through surveys, interviews, and case studies to provide a more nuanced understanding of the impact of FinTech on different stakeholders.

Second, the study focuses primarily on the impact of FinTech on the financial sector in developed countries. While the findings are relevant to developing countries as well, further research is needed to examine the specific challenges and opportunities facing these countries in the context of FinTech. Factors such as limited access to technology, weak regulatory frameworks, and high levels of financial exclusion may significantly influence the impact of FinTech in developing countries.

Third, the study does not fully account for the dynamic and rapidly evolving nature of the FinTech landscape. The pace of technological innovation is accelerating, and new business models and regulatory challenges are constantly emerging. Future research should adopt a more agile and forward-looking approach to capture the dynamic nature of the FinTech sector and anticipate future trends and challenges.

Finally, the study does not provide a comprehensive analysis of the ethical implications of FinTech and AI. The use of algorithms and data-driven decision-making in finance raises important ethical concerns about fairness, transparency, and accountability. Future research should explore these ethical dimensions in greater detail and develop frameworks for responsible innovation in the FinTech sector. This includes considering the potential for algorithmic bias, the need for data privacy and security, and the importance of ensuring that FinTech solutions are accessible and beneficial to all members of society.

Acknowledging these limitations provides a balanced perspective and reinforces the value of the study while paving the way for future research. It demonstrates intellectual honesty and strengthens the credibility of the work.

CONCLUSION

This study has provided a comprehensive analysis of the multifaceted impact of FinTech and AI on the global financial sector, moving beyond a descriptive overview to identify key challenges, opportunities, and the critical role of regulatory frameworks in shaping the future of finance. Our analysis reveals that the rapid adoption of FinTech, while driving efficiency and expanding access to financial services, also introduces novel systemic risks and necessitates adaptable regulatory approaches. The geographic disparities in FinTech adoption highlight the importance of considering local contexts, technological infrastructure, and socio-economic conditions when formulating policy interventions.

Specifically, our examination of electronic financial transactions underscores the persistent challenges posed by cross-border activities, decentralized systems, and cybersecurity threats. The increasing reliance on complex algorithms and data-driven decision-making in FinTech necessitates a renewed focus on transparency, accountability, and ethical considerations. The study findings suggest that effective regulatory frameworks must strike a delicate balance between fostering innovation and safeguarding financial stability, protecting consumers from potential harms, and promoting fair competition in the market. These frameworks should embrace a principles-based approach that allows for flexibility and adaptability, enabling them to keep pace with the rapidly evolving technological landscape. Furthermore, international cooperation is essential to address the cross-border challenges inherent in FinTech and to prevent regulatory arbitrage.

The research highlights the crucial role of RegTech in enhancing regulatory compliance and risk management within the FinTech ecosystem. Investing in technological solutions that automate regulatory processes and improve data collection and analysis can significantly improve the efficiency and effectiveness of regulatory oversight. Additionally, fostering a culture of collaboration between regulators, industry stakeholders, and technology providers is essential to developing innovative RegTech solutions that meet the evolving needs of the financial sector.

Ultimately, this study contributes to a more nuanced understanding of the transformative potential and inherent challenges of FinTech and AI in shaping the future of finance. The insights gleaned from this research have significant implications for policymakers, industry practitioners, and academics alike. By providing a robust empirical analysis and actionable recommendations, this work aims to inform the development of evidence-based policies that promote responsible innovation, enhance financial inclusion, and ensure the long-term stability and resilience of the global financial system. Future research should focus on evaluating the effectiveness of different regulatory approaches in promoting FinTech innovation while mitigating risks and exploring the ethical dimensions of AI in finance. Further, there is a need for longitudinal studies that track the long-term impacts of FinTech on financial stability, consumer welfare, and market competition. Only through a continued commitment to rigorous research and informed policymaking can we harness the full potential of FinTech to create a more inclusive, efficient, and resilient financial system for all.

BIBLIOGRAPHY:

1. Arner, D. W., Barberis, J., Buckley, R. P. (2016). FinTech, RegTech, and the reconceptualization of financial regulation. Northwestern Journal of International Law & Business, 37;
2. Bank for International Settlements. (2019). BigTech in finance: opportunities and risks;
3. Bank for International Settlements. (2021). Fintech regulation: how to achieve a level playing field;
4. Barefoot, J. A. (2020). The Future of Financial Regulation: The US Financial Innovation Bill. Journal of Financial Regulation and Compliance, 28 (3);

5. Bouveret, A. (2018). Cyber risk for the financial sector: A framework for quantitative assessment. IMF Working Paper, 18(143);
6. Brummer, C., Yadav, Y. (2019). Fintech and the innovation trilemma. Georgetown Law Journal, 107(2);
7. Chen, Y., Bellavitis, C. (2020). Blockchain disruption and decentralized finance: The rise of decentralized business models. Journal of Business Venturing Insights, 13, e00151;
8. Dahlberg, T., Guo, J., Ondrus, J. (2015). A critical review of mobile payment research. Electronic Commerce Research and Applications, 14 (5);
9. Deloitte. (2021). RegTech Universe 2021;
10. Donnelly, M. (2016). Payments in the digital market: Evaluating the contribution of Payment Services Directive II. Computer Law & Security Review, 32 (6);
11. Eling, M., Lehmann, M. (2018). The impact of digitalization on the insurance value chain and the insurability of risks. The Geneva Papers on Risk and Insurance-Issues and Practice, 43 (3);
12. EY. (2019). EY Global FinTech Adoption Index 2019. Available at: <https://www.ey.com>;
13. Feyen, E., Frost, J., Gambacorta, L., Natarajan, H. (2021). FinTech and the digital transformation of financial services: Implications for market structure and public policy;
14. Financial Action Task Force. (2019). Guidance for a risk-based approach to virtual assets and virtual asset service providers. FATF, Paris;
15. Financial Conduct Authority UK. (2015). Regulatory Sandbox;
16. Financial Stability Board. (2019). FinTech and market structure in financial services;
17. Financial Stability Board. (2022). FinTech and Market Structure in the COVID-19 Pandemic;
18. Houben, R., Snyers, A. (2018). Cryptocurrencies and blockchain: Legal context and implications for financial crime, money laundering and tax evasion. European Parliament's Special Committee on Financial Crimes, Tax Evasion and Tax Avoidance;
19. IBM. (2021). Cost of a Data Breach Report;
20. International Monetary Fund. (2021). The Rise of Digital Money;
21. Jenik, I., Lauer, K. (2017). Regulatory sandboxes and financial inclusion. Washington, DC: CGAP;
22. Jung, D., Dorner, V., Weinhardt, C., Pusmaz, H. (2018). Designing a robo-advisor for risk-averse, low-budget consumers. Electronic Markets, 28 (3);
23. Knight Capital Group incident: SEC. (2013). Administrative Proceeding File No. 3-15570;
24. Lee, I., Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. Business Horizons, 61 (1);
25. Mbama, C. I., Ezepue, P. O. (2018). Digital banking, customer experience and bank financial performance: UK customers' perceptions. International Journal of Bank Marketing, 36 (2);
26. Monehin, O., Okeke, J., Aina, O. (2022). Cross-border fintech regulation and regulatory challenges. Journal of Financial Regulation and Compliance, 30(1);
27. OECD. (2018). G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age;
28. Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. Borsa Istanbul Review, 18(4);
29. Thakor, A. V. (2020). Fintech and banking: What do we know? Journal of Financial Intermediation, 41, 100833;
30. World Bank Group. (2020). Global Experiences from Regulatory Sandboxes;
31. Zetzsche, D. A., Preiner, C. (2018). Cross-Border Crowdfunding: Towards a Single Crowdlending and Crowdinvesting Market for Europe. European Business Organization Law Review, 19 (2);
32. Zetzsche, D. A., Buckley, R. P., Arner, D. W., Barberis, J. N. (2017). From FinTech to TechFin: The regulatory challenges of data-driven finance. New York University Journal of Law and Business, 14(2).

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UNVEILING NEW INSIGHTS ABOUT THE INFLUENCE OF OIL PRICES ON GDP IN OAPEC NATIONS: MMQR INVESTIGATION

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Abstract. Employing the methodology of moments quantile regression with fixed effects (MM-QR), this research examines the influence of variations in oil prices on economic development within Arab oil-exporting nations that are affiliated with the Organisation of Arab Petroleum Exporting Countries (OAPEC). Comprehensive data from 1990 to 2021 for eleven OAPEC member countries are analyzed. The empirical findings derived from the analysis reveal a significant and positively correlated association between the fluctuations in oil prices and economic growth, particularly when examined within the context of nations exhibiting higher Gross Domestic Product (GDP) quantiles, which suggests that countries possessing elevated GDP levels tend to derive greater economic advantages from increases in oil prices. Nevertheless, it is noteworthy that the impact of this correlation diminishes considerably for countries situated within the lower GDP quantiles. Additionally, population growth positively affects GDP but exhibits diminishing returns over time, while exchange rate fluctuations show negligible impact on overall economic stability and growth.

KEYWORDS: OIL PRICE FLUCTUATIONS, GDP, METHOD OF MOMENTS QUANTILE REGRESSION, POPULATION, OAPEC.

INTRODUCTION

Strong turbulences marked by abrupt variations in oil prices have rocked the global oil market during the past few decades. The times of highest oil price volatility were 1973, 1979, 2008, and 2020, which followed the 2019–2020 coronavirus epidemic. Because the US has run out of storage space, the West Texas Intermediate futures crude oil price saw negative trading for the first time in April 2020. The global oil market's past indicates that macroeconomic success and fluctuations in oil prices have historically been closely correlated. Both nations that import oil and nations that export oil may experience economic instability as a result of oil shocks. Furthermore, in some oil-dependent economies, sudden and severe swings in oil prices may be the cause of financial and economic crises. Since it can have an impact on producers, governments, and consumers, the volatility of global oil prices and how it affects macroeconomic performance have become more of an issue for economies.[1]

For centuries, oil has pulsated through the veins of the Arab world, fueling not only its cars and industries but also its societies and political landscapes. The OAPEC members have witnessed an intricate and influential interaction between their oil wealth and economic fortunes. This relationship dances to the rhythm of the up-and-down nature of oil prices, a volatile melody that can uplift economies to soaring heights or plunge them into the abyss of stagnation.

Hence, this investigation endeavors to enhance the existing literature in twofold. Initially, this paper measures the influence of fluctuations in oil prices on the trajectory of economic expansion in Arab nations that export oil. This involves analyzing historical data to identify patterns and correlations between oil prices and economic indicators such as Gross Domestic Product growth. The choice of these nations is according to its importance in the oil market since they contain leader countries such as Saudi Arabia, Iraq, Libya and Algeria. Second, for the first time, this analysis uses the modern MMQR procedure to allow us to track the effect of oil prices on several quantiles of GDP. This procedure will help us to determine and estimate what role oil prices play in low, medium and high GDP levels among the nations of the study.

1. LITERATURE REVIEW

The oscillations observed in oil prices exert significant ramifications on economic development within Arab nations, especially those that exhibit a pronounced dependence on oil exports. The link between oil price variations and GDP growth is complicated and varied, impacted by different economic, political, and social factors.

To begin with, real GDP in the GCC countries, which include Saudi Arabia, Bahrain, Qatar, Kuwait, United Arab Emirates, and Oman, reacts asymmetrically to oil price changes, specifically, positive oil price shocks exert a more pronounced positive influence on GDP than negative shocks. This asymmetry suggests that while rising oil prices can stimulate economic activity, falling prices may not have an equally detrimental effect, particularly in nations like Kuwait and Qatar, where the negative impacts of price declines are more pronounced.[2]

Moreover, the interconnectedness of oil prices, electricity consumption, and GDP in the GCC region further complicates this relationship. The petroleum sector constitutes the essential foundation of the economies in these countries, accounting for a substantial proportion of the Gross Domestic Product (GDP). Consequently, fluctuations in oil prices possess the capacity to trigger significant modifications in governmental revenue streams, which in turn affect public spending and investment endeavors. This cyclical interdependence engenders a situation wherein elevated oil prices may result in augmented government spending on infrastructure and social initiatives, thus facilitating economic development.[3]

1 Marimoutou, V., Raggad, B., Trabelsi, A. (2009). Extreme Value Theory and Value at Risk: Application to oil market. Energy Economics, 31(4), pp. 519-530. Doi: <https://doi.org/10.1016/j.eneco.2009.02.005>.

2 Zmami, M., Ben Salha, O. (2020). Oil price and the economic activity in GCC countries: Evidence from quantile regression. Equilibrium. Quarterly Journal of Economics and Economic Policy, 15(4), pp. 651-673. Doi: <https://doi.org/10.24136/eq.2020.028>.

3 Benlaria, H., Almawishir, N. (2024). The Relationship

However, the fluctuations inherent in oil prices may concurrently generate a degree of unpredictability within the economic landscape, potentially impeding both investment activities and the formulation of economic strategies. Oil price shocks explain a significant portion of the variation in governmental income and gross domestic product within the Sultanate of Oman, indicating that fluctuations can lead to budgetary constraints during periods of low prices. This volatility can create a challenging environment for policymakers, as they must navigate the impacts of fluctuating revenues on fiscal policy and economic stability.[4]

In addition to direct impacts on GDP, oil price volatility can also influence inflation rates and the overall economic climate. Oil shocks can lead to inflationary pressures, which can further complicate economic growth. In nations that derive substantial revenue from oil exports, escalating oil prices may result in heightened production costs, which may be passed on to consumers, thereby affecting consumption and investment decisions. This inflationary effect can dampen the positive impacts of rising oil prices on GDP growth.[5]

Furthermore, the historical context of oil price shocks provides insight into their long-term effects on economic growth. The twin oil crises of the 1970s, resulted in significant economic transformations in Gulf oil exporters, as they utilized their increased revenues to invest in foreign aid and domestic development. This historical perspective underscores the potential for both beneficial and adverse outcomes stemming from oil price fluctuations, depending on how governments choose to manage their oil revenues.[6]

The situation in Iraq exemplifies an additional aspect of the repercussions of oil price fluctuations on economic development. Rodhan's research indicates that although elevated oil prices typically exert a beneficial influence on gross domestic product, the ramifications of decreasing prices are significantly more acute in nations such as Kuwait and Qatar, suggesting that the economic resilience of these nations is closely tied to their oil revenue stability.[7]

An other study analysed the level of dependency between petroleum prices and the expansion of economic activity in four member states of OPEC during the timeframe spanning from September 3, 2000, to December 3, 2010. The study results indicate that fluctuations in oil prices during times of global economic fluctuations and financial instability impact the correlation between oil and economic development in OPEC nations.[8]

Research has examined the significant influence of fluctuations in crude oil prices and their volatility on the economic expansion of countries in the MENA region. Additionally, the researcher examined the bidirectional and fluctuating correlation between economic development and oil prices. In addition, a distinct study was carried out for each MENA country that exports oil and each country that imports oil. The study employed a panel quantile regression methodology using alternative linear models. The research findings revealed that fluctuations and volatility of oil prices have differing impacts on countries that export and import oil. Across various quantiles, the effects of oil price variations and the level of uncertainty associated with them differed.[9]

between Electricity Consumption, Price of Oils, and Gross Domestic Product in the Gulf Cooperation Council Countries. International Journal of Energy Economics and Policy, 14(1), pp. 66-75. Doi: <https://doi.org/10.32479/ijeep.15108>.

4 Al Jabri, S., Raghavan, M., Vespignani, J. (2022). Oil prices and fiscal policy in an oil-exporter country: Empirical evidence from Oman. Energy Economics, 111(106103). Doi: <https://doi.org/10.1016/j.eneco.2022.106103>.

5 Gómez-Loscos, A., Gadea, M., Montañés, A. (2012). Economic growth, inflation and oil shocks: are the 1970s coming back? Applied Economics, 44(35), pp. 4575-4589. Doi: <https://doi.org/10.1080/00036846.2011.591741>.

6 Werker, E., Ahmed, F., Cohen, C. (2009). How Is Foreign Aid Spent? Evidence from a Natural Experiment. American Economic Journal: Macroeconomics, 1(2): 225-44. Doi: <10.1257/mac.1.2.225>.

7 Rodhan, M. (2024). Macroeconomic impacts of oil price shocks: evidence from Iraq by using vector autoregressive model. International Journal of Energy Economics and Policy, 14(3), pp. 162-170. Doi: <https://doi.org/10.32479/ijeep.15681>.

8 Ftiti, Z., Guesmi, K., Teulon, F., Chouachi, S. (2016). Relationship between crude oil prices and economic growth in selected OPEC countries. The Journal of Applied Business Research, 32(1), pp. 11-22. Doi: <http://dx.doi.org/10.19030/jabr.v32i1.9483>.

9 Mamdouh, A. (2023). Oil price fluctuations and economic growth: the case of MENA countries. Review of Economics and Political Science, 8(5), pp. 353-

In conclusion, the influence of fluctuations in oil prices on the economic advancement of Arab countries is characterized by a complex interplay of positive and negative effects. While increasing oil prices may invigorate economic expansion and government revenues, volatility introduces uncertainty that can hinder investment and fiscal planning. The historical context and the specific economic structures of these nations further influence how they respond to fluctuations in oil prices. As such, there is a critical need for these countries to pursue economic diversification strategies to reduce their dependence on oil revenues and enhance their resilience to price shocks.

2. DATA AND METHODOLOGY

2.1. Methodology

We begin with a critical acknowledgment: the impact of oil price fluctuations is not a singular, one-dimensional phenomenon. It varies across countries, depending on diverse factors like the structure of their economies, their monetary policies, and their population. A simple linear relationship between oil prices and economic growth would be a disservice to the complexities at play.

Hence, the present study employs the methods of moments quantile regression with fixed effect (MM-QR),[10] to examine potential variations in the impact of oil prices on GDP among various quantiles. This strategy enables us to obtain a comprehensive understanding of the conditional distribution in contrast to the ordinary least squares (OLS) technique.

This study makes use of yearly data from 1990 to 2021, for eleven members OAPEC Oil Arab exporting countries: Algeria, Egypt, Bahrain, Kuwait, Iraq, Saudi Arabia, Qatar, Libya, United Arab Emirates, Tunisia, and Syria.

This study looks at how the spot price of crude oil affects economic growth. GDP is the dependent variable used to measure economic growth. As a result, the specification now contains a number of independent variables. These are the independent variables: crude oil spot prices (OILP), Population (POP), and Exchange rate for local currency (EXR). All variables were transformed into their respective natural logarithmic form to eliminate any possibility of heteroscedasticity issues and to enhance the significance of the analysis, as formulated below:

$$\text{InGDP it} = f(\text{InOILP it}, \text{InPOP it}, \text{InEXR it}) \quad (01)$$

$$\text{InGDP it} = \alpha 0\text{i} + \alpha 1\text{i InOILP it} + \alpha 2\text{i InPOP it} + \alpha 3\text{i InEXR it} + \varepsilon\text{it} \quad (02)$$

In Equations (1) and (2), where i ranges from 1 to N, representing the number of nations. It is a sequence of numbers starting from 1 and increasing by 1 each time. T represents time, while $\alpha 0$i represents the fixed impacts of the country. The variables $\alpha 1$i, $\alpha 2$i, and $\alpha 3$i represent the elasticities of gross domestic product (GDP) in relation to oil prices, population, and the exchange rate for the local currency, respectively. εit denotes the error term, which is presumed to be both independent and follow a normal distribution.

To investigate the effects of population, local currency exchange rates, and crude oil spot prices on economic growth, we used panel quantile regression, which was first used in this work.[11] This approach, which is more robust than standard regression approaches that concentrate on the mean effects like OLS, gives more insightful images of the impact of the independent variables by permitting the slopes of the regression line to vary across different quantiles of the dependent variable.

However, quantile regression with individual impacts has many limitations, such as the inability to account for potential unobserved variability among people. Thus, we used the MM-QR with fixed-effect approach. This methodological approach facilitates the estimation of conditional quantiles through the amalgamation of estimates pertaining to the location and scale functions, which are derived from conditional means. In fact, rather than only changing location as in previous

379. Doi: <http://dx.doi.org/10.1108/REPS-12-2019-0162>.

10 Machado, J., Silva, J. (2019). Quantiles via moments. Journal of Econometrics, 213(1), pp. 145-173. Doi: <https://doi.org/10.1016/j.jeconom.2019.04.009>.

11 Koenker, R., & Bassett, Jr., G. (1978). Regression Quantiles. Econometrica, 46(1), pp. 33-50. Doi: <10.2307/1913643>.

work[12,13] the MM-QR allows the individual impacts to affect the full distribution as well as the location and scale of the dependent variable Y (GDP). Furthermore, MM-QR is particularly crucial for estimating quantile regression with individual effects and endogenous explanatory variables.

Models of location-scale variants include the MM-QR, which estimates the conditional quantiles of a dependent variable (Y). The distribution of variable Y is dependent on a k-dimensional vector of covariates (X). Y is determined using the following formula:

$$Yit = \alpha i + Xit'\,\beta + (\delta i + Zit'\,\gamma)\,Uit \quad (03)$$

The probability, denoted as P $\{\delta i + Zit'\,\gamma > 0\}$, is equal to 1. The parameters α, β', δ, and γ' are uncertain and require computation.

(αi, δi), where i ranges from 1 to n, reflects the fixed effects for each individual. Z consists of a k-vector that includes defined components of X. The given elements are differentiable transformations denoted by Zl, where l ranges from 1 to k. Each transformation Zl is a function of X.

$$Zl = Zl\,(X),\ l=1,.....,k \quad (04)$$

The variables Xit and Uit are independent and identically distributed for every fixed i and over time (t). Based on (Machado & Silva, 2019)[14], Uit are perpendicular to Xit and are adjusted to meet the moment conditions without strict exogeneity. The conditional quantile $Qy\ (\tau|x)$ of the dependent variable Y, as described in Eq. (3), is represented as follows:

$$Qy\ (\tau|Xit) = (\alpha i + \delta i\ (\tau)) + Xit'\,\beta + Zit'\,\gamma\ (\tau) \quad (05)$$

where Xit' includes the independent variables (OILP, POP, and EXR). The symbol $Qy\ (\tau|Xit)$ represents the quantile distribution of the dependent variable Yit (GDP), given the specific values of the explanatory variables Xit. The fixed impact of quantile τ for individual i is given by the scalar coefficient αi (τ), which is equal to the sum of αi and δi multiplied by q(τ) (αi + δi q(τ)).

Unlike the usual least-squares fixed effect, the individual effects do not show any change in the intercept. The impacts of these time-invariant characteristics can vary across different quantiles of the dependent variable Y. The estimation of q(τ) is derived from the subsequent optimisation issue:

Equation (6) can be expressed as follows:

Minq = ∑i ∑t ρτ (Rit – (δi + Zi't γ) q), where Rit represents the difference between Yit and (αi + Xi't β), and ρτ (A)= (τ-1) AI {A ≤ 0} + τ AI {A > 0} denotes the check function.

2.2. Data

Table 1 provides an overview of the various variables, while Table 2 describes statistics for the sample.

Table 1: Variable Description

VARIABLE	DEFINITION	SOURCE
GDP	Gross Domestic Product per capita (US $)	The World Bank Data
OILP	Crude OIL spot Prices (US $)	OAPEC website
POP	Population	The World Bank Data
EXR	Exchange rate for local currency (US$)	OAPEC website

According to the data presented in Table 2, the skewness values for three variables (GDP, POP, and EXR) are negative and significantly different from zero, indicating a pronounced left skewness. The Skewness value for the variable OILP is close to zero, but its Kurtosis value is far from three. The Jarque-Bera statistical test unequivocally rejects the null hypothesis of normality, providing further

12 Koenker, R. (2004). Quantile regression for longitudinal data. Journal of Multivariate Analysis, 91(1), pp. 74-89. Doi: <https://doi.org/10.1016/j.jmva.2004.05.006>.

13 Canay, I. (2011). A simple approach to quantile regression for panel data. The Econometrics Journal, 14(3), pp. 368-386. Doi: <https://doi.org/10.1111/j.1368-423X.2011.00349.x>.

14 Machado, J., & Silva, J. (2019). Quantiles via moments. Journal of Econometrics, 213(1), pp. 145-173. Doi: <https://doi.org/10.1016/j.jeconom.2019.04.009>.

TABLE 2: DESCRIPTIVE STATISTICS

VARIABLES	LNGDP	LNOILP	LNPOP	LNEXR
Mean	8.90	3.65	15.98	-1.58
Median	8.94	3.72	16.16	-1.30
Maximum	11.49	4.69	18.50	1.31
Minimum	3.12	2.51	12.99	-6.90
Standard deviation	1.35	0.67	1.43	2.28
Skewness	-0.57	0.005	-0.32	-0.85
Kurtosis	3.90	1.61	2.12	3.04
Jarque Berra	31.198 (0.000)	28.277 (0.000)	17.421 (0.000)	43.239 (0.000)
(.) denotes p-value.				

Source: EViews 12 program output

confirmation that using OLS estimation will be unreliable, while adopting quantile regression is more appropriate and resilient for this investigation.

3. EMPIRICAL RESULTS

3.1. Correlation matrix / Variance inflation factor:

Table 3 displays the correlation coefficients between the different variables, along with the findings of the variance inflation factor. The absolute values of all correlation coefficients between independent variables are below 0.7. The VIF test findings demonstrate that there is no multicollinearity among the independent variables, as the average value of 1.39 is below 5. The VIF findings support our perspective of including OILP, POP, and EXR in the same model.

3.2. Slope homogeneity test:

Before continuing, it is essential to perform a crucial test to verify the accuracy of the Slope homogeneity hypothesis for the provided data. Therefore, we will utilise two tests for analysis: (Pesaran & Yamagata, 2008)[15] and (Blomquist & Westerlund, 2013).[16] The findings delineated in

15 Pesaran, M., Yamagata, T. (2008). Testing slope homogeneity in large panels. Journal of Econometrics, 142(1), pp. 50-93. Doi: <http://dx.doi.org/10.2139/ssrn.671050>.

16 Blomquist, J., Westerlund, J. (2013). Testing slope homogeneity in large panels with serial correlation.

TABLE 3: CORRELATION MATRIX – VARIANCE INFLATION FACTOR

	LNGDP	LNOILP	LNPOP	LNEXR	VIF	1/VIF
LNGDP	1.000				-	-
LNOILP	0.304	1.000			1.57	0.63
LNPOP	-0.607	0.171	1.000		1.56	0.64
LNEXR	0.394	-1.152	-0.595	1.000	1.03	0.96
Mean	-	-	-	-	1.39	-

Source: STATA 17 program output

TABLE 4: SLOPE HOMOGENEITY TEST RESULTS:

Test	Delta	P-value
Test of: Pesaran and Yamagata		
Δ	22.996	0.000
Δ adj	25.034	0.000
Test of : Blomquist and Westerlund		
Δ	21.186	0.000
Δ adj	23.064	0.000

Source: STATA 17 program output

Table 4 demonstrate the rejection of the null hypothesis of uniformity in the slope across different nations. Thus, it is crucial to take into account the limitations imposed by variability on the slope to guarantee reliable outcomes in estimating techniques.

3.3. Cross-section dependence tests

We utilize four distinct examinations: the Breusch-Pagan LM (BP) test suggested by (Breusch & Pagan, 1980),[17] the Pesaran Scaled LM (PS) test presented by (Pesaran M. , 2004),[18] the Bias corrected scaled LM (BCS) test proposed by (Baltagi et al., 2012)[19] and the Pesaran CD (PE) test (Pesaran, 2007)[20] The findings showed that the null hypothesis of "no CSD" is not accepted, they unequivocally affirm that any shock impacting a variable in one country would propagate its impact to the same variable in other nations.

3.4. MM-QR results and discussion:

The findings of MM-QR across different quantiles have flourished in Table 6; the coefficient related to OILP is positive, significant and gradually increased from 0.2 to 0.9 quantiles and remains insignificant for the first quantile. Notably, this

Economics Letters, 121(3), pp. 374-378. Doi: <https://doi.org/10.1016/j.econlet.2013.09.012>.

17 Breusch, T., Pagan, A. (1980). The Lagrange Multiplier Test and its Applications to Model Specification in Econometrics. The Review of Economic Studies, 47(1), pp. 239-253. Doi: <https://doi.org/10.2307/2297111>.

18 Pesaran, M. (2004). General Diagnostic Tests for Cross Section Dependence in Panels. Cambridge Working Papers in Economics No. 0435, Faculty of Economics, University of Cambridge.

19 Baltagi, B., Feng, Q., Kao, C. (2012). A Lagrange Multiplier test for cross-sectional dependence in a fixed effects panel data model. Journal of Econometrics, 170(1), pp. 164-177. Doi: <https://doi.org/10.1016/j.jeconom.2012.04.004>.

20 Pesaran, M. (2007). A simple panel unit root test in the presence of cross-section dependence. Journal of applied econometrics, 22(2), pp. 265-312. Doi: <http://dx.doi.org/10.1002/jae.951>.

TABLE 5: CROSS-SECTION DEPENDENCE TEST RESULTS:

VARIABLES\TEST	BP TEST	PS TEST	BCS TEST	PE TEST
LNGDP	1020.98***	92.10***	91.92***	26.11***
LNOILP	1760.00***	162.56***	162.38***	41.95***
LNPOP	1621.82***	149.39***	149.21***	40.23***
LNEXR	873.08***	78.00***	77.82***	5.82***

**** Indicates the null hypothesis being rejected with a significance level of 1%*

Source: EViews 12 program output

TABLE 6: THE FINDINGS OF THE MMQR APPROACH

QUANTILES	LOW QUANTILES			MEDIUM QUANTILES			HIGH QUANTILES		
	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
Core independent variable									
LNOILP	0.219	0.267 *	0.31 **	0.350 ***	0.383 ***	0.412 ***	0.439 ***	0.462 ***	0.487 ***
Controle variables									
LNPOP	0.577 **	0.537 ***	0.499 ***	0.467 ***	0.439 ***	0.415 ***	0.392 ***	0.373 ***	0.352 ***
LNEXR	-0.384	-0.310	-0.240	-0.180	-0.128	-0.083	-0.041	-0.036	0.032

*Notes: The symbols ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.*
Source: STATA 17 program output

outcome is in line with findings for GCC members.[21] This heterogeneous impact across income levels is likely driven by several factors. MM-QR allows us to isolate these dynamics by revealing how oil price changes differentially affect various quantiles of the GDP distribution. The results indicate that as GDP increases from the 0.2 to the 0.9 quantiles, the impact of oil price fluctuations becomes stronger and more positive. This means that countries with higher GDP tend to benefit more from increases in oil prices in terms of economic growth. The insignificance of the coefficient for the lowest GDP quantile indicates that changes in oil prices have a minimal impact on the poorest sectors of the economy. This might be because they're not as connected to global markets or rely more on industries other than oil for their economy.

This outcome can be attributed to the fact that high-income countries (those with elevated GDP levels) benefit from a more robust economy through strategic investment projects yielding substantial economic returns. Nations such as Saudi Arabia, Qatar, and the UAE, when experiencing a rise in oil prices, acquire additional revenue that is subsequently channeled into local investments. This process directly and significantly impacts economic growth. Conversely, countries with lower GDP levels are characterized by limited and weak investment opportunities. In these nations, oil revenues are primarily allocated towards bolstering infrastructure and funding social expenditures, which do not contribute as substantially to economic growth.

Population has a positive and significant impact on GDP and decreases gradually from the low to high quantiles confirming prior findings.[22] Accordingly, this outcome can be explained by the fact that when the population grows further, resources like land, infrastructure, and skilled labor might become relatively scarce, leading to diminishing marginal returns from additional population growth. This could explain the decreasing effect in higher quantiles.

The effect of exchange rate for local currency on GDP is negative but insignificant across all quantiles, which aligns with previous research.[23] The insignificant effects could be explained by the fact that a substantial portion of oil exports from

21 Zmami, M., Ben Salha, O. (2020). Oil price and the economic activity in GCC countries: Evidence from quantile regression. Equilibrium. Quarterly Journal of Economics and Economic Policy, 15(4), pp. 651-673. Doi: <https://doi.org/10.24136/eq.2020.028>.

22 Maestas, N., Mullen, K., Powell, D. (2023). The Effect of Population Aging on Economic Growth, the Labor Force, and Productivity. American Economic Journal: Macroeconomics, 15(2): 306-32. Doi: <10.1257/mac.20190196>.

23 Ayad, H., Ben-Salha, O., Ouafi, M. (2023). Do oil prices predict the exchange rate in Algeria? Time, frequency, and time-varying Granger causality analysis. Economic Change and Restructuring, 56(5), pp. 3545-3566. Doi: <https://doi.org/10.1007/s10644-023-09545-1>.

these nations are denominated in US dollars, meaning they receive a fixed income regardless of their local currency's exchange rate. This reduces the direct impact of fluctuations on overall GDP.

CONCLUSION

In summary, our paper gives us a clearer picture of how oil prices affect the economies of Arab countries that export oil. The study's duration was from 1990 to 2021 using a special analysis method called Moment of Quantile Regression (MM-QR).

Our results support what we suspected: there's a strong and positive connection between oil prices and economic growth in these countries. But what's interesting is that this connection isn't the same for everyone. We found that as a country's wealth (measured by GDP) goes up, the impact of oil prices on its economic growth gets stronger. However, for the poorest parts of these countries, the impact is much smaller. This suggests that poorer areas might not be as affected by changes in oil prices, perhaps because they're not as connected to the global economy or they rely more on industries other than oil.

We also looked at how population growth and changes in exchange rates affect economic output. It turns out that while a growing population initially boosts economic growth, the effect decreases as a country becomes wealthier. This tells us that the correlation between population and economic growth is significantly more complicated than it seems. Similarly, changes in exchange rates don't seem to have a big impact on overall economic output, likely because these countries mostly trade oil in foreign currencies.

Recommendations:

According to our research, we may provide some suggestions:

- Leaders should prioritise diversifying their sources of revenue, particularly in economically disadvantaged regions, to reduce their reliance on oil revenues and enhance their ability to rebound from challenging circumstances;
- Make strong plans to handle changes in money value, like saving money and being careful with spending, to protect against sudden changes in how much money is worth.
- Spend time and money learning about how money and economies work better, so we can make smart plans for when oil prices go up and down and keep our economies strong in the long term.

BIBLIOGRAPHY:

1. Al Jabri, S., Raghavan, M., Vespignani, J. (2022). Oil prices and fiscal policy in an oil-exporter country: Empirical evidence from Oman. Energy Economics, 111(106103). Doi: <https://doi.org/10.1016/j.eneco.2022.106103>;
2. Ayad, H., Ben-Salha, O., Ouafi, M. (2023). Do oil prices predict the exchange rate in Algeria? Time, frequency, and time-varying Granger causality analysis. Economic Change and Restructuring, 56(5). Doi: <https://doi.org/10.1007/s10644-023-09545-1>;
3. Baltagi, B., Feng, Q., Kao, C. (2012). A Lagrange Multiplier test for cross-sectional dependence in a fixed effects panel data model. Journal of Econometrics, 170(1). Doi: <https://doi.org/10.1016/j.jeconom.2012.04.004>;
4. Benlaria, H., Almawishir, N. (2024). The Relationship between Electricity Consumption, Price of Oils, and Gross Domestic Product in the Gulf Cooperation Council Countries. International Journal of Energy Economics and Policy, 14(1). Doi: <https://doi.org/10.32479/ijeep.15108>;
5. Blomquist, J., Westerlund, J. (2013). Testing slope homogeneity in large panels with serial correlation. Economics Letters, 121(3). Doi: <https://doi.org/10.1016/j.econlet.2013.09.012>;

6. Breusch, T., Pagan, A. (1980). The Lagrange Multiplier Test and its Applications to Model Specification in Econometrics. The Review of Economic Studies, 47(1). Doi: <https://doi.org/10.2307/2297111>;
7. Canay, I. (2011). A simple approach to quantile regression for panel data. The Econometrics Journal, 14(3). Doi: <https://doi.org/10.1111/j.1368-423X.2011.00349.x>;
8. Ftiti, Z., Guesmi, K., Teulon, F., Chouachi, S. (2016). Relationship between crude oil prices and economic growth in selected OPEC countries. The Journal of Applied Business Research, 32(1). Doi: <http://dx.doi.org/10.19030/jabr.v32i1.9483>;
9. Gómez-Loscos, A., Gadea, M., Montañés, A. (2012). Economic growth, inflation and oil shocks: are the 1970s coming back? Applied Economics, 44(35). Doi: <https://doi.org/10.1080/00036846.2011.591741>;
10. Koenker, R. (2004). Quantile regression for longitudinal data. Journal of Multivariate Analysis, 91(1). Doi: <https://doi.org/10.1016/j.jmva.2004.05.006>;
11. Koenker, R., Bassett Jr, G. (1978). Regression Quantiles. Econometrica, 46(1). Doi: <10.2307/1913643>;
12. Machado, J., Silva, J. (2019). Quantiles via moments. Journal of Econometrics, 213(1). Doi: <https://doi.org/10.1016/j.jeconom.2019.04.009>;
13. Maestas, N., Mullen, K., Powell, D. (2023). The Effect of Population Aging on Economic Growth, the Labor Force, and Productivity. American Economic Journal: Macroeconomics, 15(2). Doi: <10.1257/mac.20190196>;
14. Mamdouh, A. (2023). Oil price fluctuations and economic growth: the case of MENA countries. Review of Economics and Political Science, 8(5). Doi: <http://dx.doi.org/10.1108/REPS-12-2019-0162>;
15. Marimoutou, V., Raggad, B., Trabelsi, A. (2009). Extreme Value Theory and Value at Risk: Application to oil market. Energy Economics, 31(4). Doi: <https://doi.org/10.1016/j.eneco.2009.02.005>;
16. Pesaran, M. (2004). General Diagnostic Tests for Cross Section Dependence in Panels. Cambridge Working Papers in Economics No. 0435, Faculty of Economics, University of Cambridge;
17. Pesaran, M. (2007). A simple panel unit root test in the presence of cross-section dependence. Journal Of Applied Econometrics, 22(2). Doi: <http://dx.doi.org/10.1002/jae.951>;
18. Pesaran, M., Yamagata, T. (2008). Testing slope homogeneity in large panels. Journal Of Econometrics, 142(1), pp. 50-93. Doi: <http://dx.doi.org/10.2139/ssrn.671050>;
19. Rodhan, M. (2024). Macroeconomic impacts of oil price shocks: evidence from Iraq by using vector autoregressive model. International Journal of Energy Economics and Policy, 14(3). Doi: <https://doi.org/10.32479/ijeep.15681>;
20. Werker, E., Ahmed, F., Cohen, C. (2009). How Is Foreign Aid Spent? Evidence from a Natural Experiment. American Economic Journal: Macroeconomics, 1(2). Doi: <10.1257/mac.1.2.225>;
21. Zmami, M., Ben Salha, O. (2020). Oil price and the economic activity in GCC countries: Evidence from quantile regression. Equilibrium. Quarterly Journal of Economics and Economic Policy, 15(4). Doi: <https://doi.org/10.24136/eq.2020.028>.

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GLOBALIZATION'S DOUBLE-EDGED SWORD: RESOURCE DEPENDENCY AND GEO-POLITICS OF OIL IN PETRÓLEOS DE VENEZUELA (PDVSA)

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Abstract. Combining institutional theory of the firm with resource dependency analysis, this study explores the ever-changing geopolitics of oil and challenges of overproduction in Venezuela's national oil company (NOC), PDVSA. It analyzes a state company's structural crisis and its limitations for growth through the lens of resource dependency theory and geopolitics of oil. Despite the recent easing of US sanctions, our findings suggest that an alternative firm strategy is rarely, if ever, viable for the company due to its international and geopolitical dependency. This paper further argues that PDVSA's performance reflects greater alignment of crisis management with the geopolitics of resource-based development. PDVSA has pursued a strategy of 'jockeying' between transnational oil interests (privately-owned, Western MNEs) and non-Western oil companies from allied nations like Russia and China. Furthermore, since much of the oil windfall resulted from currency overvaluation by inefficient national and foreign capital, PDVSA has been unable to maintain a competitive advantage that could enhance its performance. This study is limited to the oil sector in Latin America, but a few examples of 'resource nationalism' emerging from other countries are briefly discussed. The paper concludes by discussing the policy implications of the research for oil industry managers in the context of ongoing globalization.

KEYWORDS: EMBEDDED AUTONOMY, RESOURCE NATIONALISM, STATE-OWNED OIL COMPANY, RENTIER SOCIALISM

INTRODUCTION

This paper examines the evolving corporate performance and crisis of Venezuela's state-owned oil company, PDVSA, from early 2000 up to the present. Venezuela suffered an unprecedented economic collapse, most intensified by the 2017 debt default and the COVID-19 pandemic most recently. From 2013 to 2018, GDP contracted by a cumulative 47.8 percent, with inflation reaching 130,060.2 percent in 2018.[1] As oil production consistently fell for more than a decade, it collapsed after 2016, forcing President Nicolás Maduro to seek a restructuring of sovereign debt and to renegotiate oil contracts. From 2017 to 2022, disruptions in oil shipments, a declining workforce, and US sanctions on crude oil exports occurred.

With the Nationalization Law of 1976, former President Carlos Andres Perez created PDVSA (Petroleos de Venezuela, S.A.)—the state-owned oil and natural gas company and a holding company for the oil industry that was initially structured to run as a corporation with minimal government interference. Elected in 1998 on a populist authoritarian platform, President Chavez extended direct state control over PDVSA, also to align its governance with his 'symbolic nation-building project' called the *Bolivarian Revolution*.[2] Today, as the largest employer in Venezuela, PDVSA "accounts for a significant share of the country's gross domestic product (GDP), government revenue, and export earnings".[3]

Scholarly interest in NOCs has increased in recent years due to a global commodity boom (2000-2004) and the resurgence of 'resource nationalism'[4] in different parts of the world. For Venezuela, in addition to resource dependency, fiscal over-reliance on oil makes PDVSA highly relevant for discussions[5] on 'rent capitalism', 'rentier socialism', 'resource nationalism', 'extractive institutions', 'rentier state', or even a 'petrostate'. These models define the 'paradox of plenty'[6] as a condition in which developing countries become overly dependent on oil and gas production. This form of dependency leads to potential economic windfalls that typically contribute between one-third and one-half of their GDP.[7] Natural resource-based development, however, is not unique to Venezuela. In most rentier states based on oil, economists point to a 'resource curse' that is associated with poor economic growth, lack of democratic institutions, and a weak domestic productive sector.[8]

1 CEPAL. (2019). Bolivarian Republic of Venezuela: General Trends, in Economic Survey of Latin America and the Caribbean. Available at: <https://repositorio.cepal.org/bitstream/handle/11362/44675/144/EEI2019_Venezuela_en.pdf>.

2 Strønen, I. Å. (2020). Venezuela's oil specter: Contextualizing and historicizing the Bolivarian attempt to sow the oil. History and Anthropology, 33(4), pp. 472–495. Available at: <https://doi.org/10.1080/02757206.2020.1762588>.

3 US Energy Information Administration. (2019, January 7). Background Reference: Venezuela. Available at: <https://www.eia.gov/international/content/analysis/countries_long/Venezuela/background.htm>.

4 Wilson, J. (2015). Understanding resource nationalism: economic dynamics and political institutions. Contemporary Politics, 2015, Vol. 21, No. 4, pp. 399–416, 400-401.

5 Mommer, B. (1990). Oil Rent and Rent Capitalism: The Example of Venezuela, Review. Fernand Braudel Center, Vol. 13, No. 4, Fall, pp. 417-437; Cardin, P. (1993). Rentierism and the Rentier State: A Comparative Examination. McGill University, PhD thesis; Karl, T. L. (1997). The Paradox of Plenty: Oil Booms and Petro-States. Berkeley: University of California Press; Acemoglu, D., Robinson, J. (2012). Why Nations Fail: The Origins of Power, Prosperity, and Poverty, ed. New York: Crown; Losman, D. L. (2010). The Rentier State and National Oil Companies: An Economic and Political Perspective. Middle East Journal, Vol. 64, No. 3, Summer, pp. 427-445; Lopez-Maya, M. (2014). The Political Crisis of Post-Chavismo. Social Justice, Vol. 40, No. 4 (134), pp. 68-87; Wilson, J., 399–416; Lander, E. (2016). The implosion of Venezuela's rentier state. Transnational Institute New Politics Papers. Available at: <https://www.tni.org/en/publication/the-implosion-of-venezuelas-rentier-state>.

6 Karl, T. L. (1997).

7 Di John, J. (2010). From Windfall to Curse? Oil and Industrialization in Venezuela, 1920 to the Present. Pennsylvania University Press. A rentier state or economic model tends to emerge when "mineral and fuel production is at least 10 percent of GDP and mineral, and fuel exports are at least 40 percent of total exports" (Di John. (2010). p. 79).

8 Sachs, J. D., Warner, A. (1999). The Big Rush, Natural Resource Booms and Growth. Journal of Development Economics, v. 59 (1, Jun), pp. 43-76; Venables, A. (2016). Using Natural Resources for Development:

Resource-based development is characterized by highly volatile revenue. Due to a narrow tax base, the government enjoys absolute freedom and has an active role in oil production, a feature less typical of more diversified economies.[9] Being the main distributor of wealth with a monopoly on oil and direct control of the oil industry, the government encounters fewer market pressures to guide the administration of oil wealth.

This study examines the multitude of stakeholders that constitute oil policy-making in PDVSA. After deconstructing the rentier oil strategy as outlined below, it analyzes how the key institutional stakeholders (national government, international oil companies, and their respective governments) have shaped PDVSA's corporate strategy and performance over time. In our analysis, we draw on the institutional theory of the firm and consider the fragmented and opportunistic nature of the rent distribution system in the global oil market.[10] This paper argues that PDVSA's performance reflects greater alignment of crisis management with the geopolitics of resource-based development. Against the backdrop of resource dependency and loss of oil rent since 2016, PDVSA has pursued a strategy of 'jockeying' between transnational oil interests (privately-owned, Western MNEs) and non-Western oil companies from allied nations like Russia and China. Furthermore, since much of the oil windfall resulted from currency overvaluation by both inefficient foreign and national capital,[11] PDVSA has been unable to maintain a competitive advantage that could enhance its performance. PDVSA's ties with China and Russia extend beyond mere financial support, they are also influenced by hostile relations with the US. Despite China's increasing control of the global oil market, North America remains the top destination for PDVSA's crude oil exports. The U.S. is the dominant player as the main creditor and investor in the international oil market. Using a case study of Venezuela's national oil company in crisis, this study aims to explore the interaction between firm strategy and evolving geopolitics of oil in natural resource-dependent economies.

1. LITERATURE REVIEW: OIL INDUSTRY AND NATURAL RESOURCE DEPENDENCY

The research on rentier states originates from 'resource curse' analysis[12] and 'paradox of plenty'.[13] These models refer to a problem of over-relying on oil and gas reserves as a potential source of commodity windfalls for developing countries. Mahdavy, who gave the rentier state its contemporary meaning, defined the rentier state as one that relies almost exclusively on the export of raw materials such as oil, gas, or minerals. This includes nations that are financially weak but well-endowed in natural resources.[14] The term 'external rent' is used to designate the financial proceeds from sales of the commodity to foreign companies or governments, as opposed to the profits generated typically by manufacturing or productive economic sectors. The extent of this reliance is such that it generates harmful outcomes for development,

Why Has It Proven So Difficult? Journal of Economic Perspectives. 30(1): 161–184; Ross, M. (2015). What Have We Learned about the Resource Curse? Annual Review of Political Science. 18: 239–259; Sachs, J. D., Warner, A. (1995). Natural Resource Abundance and Economic Growth. NBER Working Paper No. 5398. Available at: <https://www.nber.org/papers/w5398>.

9 Manzano, O., Monaldi, F. (2010). The Political Economy of Oil Contract Renegotiation in Venezuela., in H. William, F. Sturzenegger (eds.), The Natural Resources Trap: Private Investment without Public Commitment; MIT Press: MA, Cambridge.

10 Wiseman, C., Beland, D. (2010). The Politics of Institutional Change in Venezuela: Oil Policy During the Presidency of Hugo Chávez. Canadian Journal of Latin American and Caribbean Studies, Vol. 35, No. 70 (2010), pp. 141-164.; Styhre, A. (2019). The institutional theory of the firm: Embedded Autonomy, Routledge: London, UK.

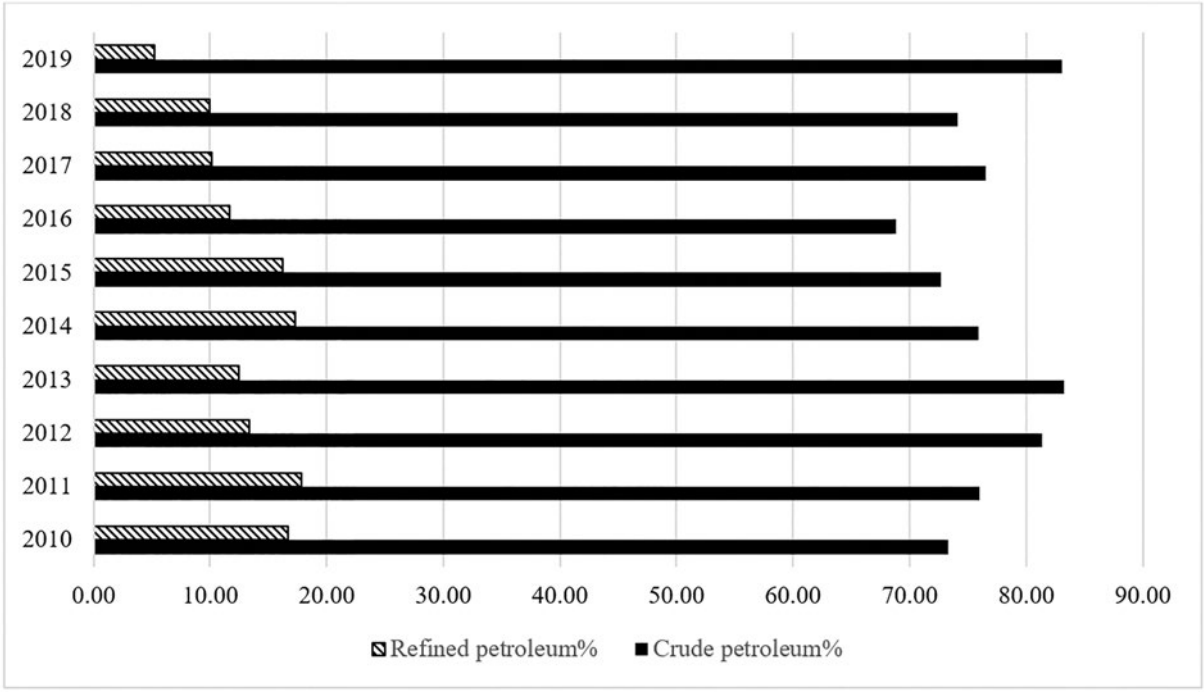
11 Dachevsky, F., Kornblihtt J. (2017). The Reproduction and Crisis of Capitalism in Venezuela under Chavismo. Latin American Perspectives, 44(1): 78-93, p. 78.

12 Luong. P. J., Weinthal, E. (2006). Rethinking the Resource Curse: Ownership Structure, Institutional Capacity, and Domestic Constraints. Annual Review of Political Science, Vol. 9, pp. 241-263.

13 Karl, T. L. (1997).

14 Mahdavy, H. (1970). The Pattern and Problems of Economic Development in Rentier States: The Case of Iran, in Cook, M. A. (eds). Studies in the Economic History of the Middle East, Oxford University Press: Oxford, London, pp. 427-476.

FIGURE 1. VENEZUELA: PETROLEUM INDUSTRY AS SHARE OF EXPORTS %



Source: Figure is the author's own. Data from UN Comtrade, The Observatory of Economic Complexity (2021), via Statista – The Statistics Portal

such as poor economic growth, a weak domestic productive sector, endemic corruption, weak property rights, and unequal distribution of wealth.[15] While the rentier model is common in the Arab world, states that depend on exporting petroleum and distributing its windfall also include Venezuela, Nigeria, Indonesia, Botswana, and Russia.[16]

NOCs serve crucial policy functions for rentier states. They secure a 'ruling bargain'[17] between political elites and society based on concessions in exchange for populist economic policies. In this framework, public officials secure regime legitimacy through forming loyal constituencies ('patron-client networks') that support the petrostate in return for a portion of oil income captured by NOCs.[18] This analysis is pertinent to NOCs that operate as state monopolies in markets with imperfect competition and direct access to economic rent (above-normal profits). While some of these nations do have substantial financial assets, such as Saudi Arabia and Qatar, most are barely capable of funding development in profit-generating, labor-intensive enterprises. Therefore, they do not have a strong domestic productive sector. Venezuela is not even the most extreme example of dependency. Angola and other African petroleum exporting nations are even more vulnerable to the boom-and-bust cycles of the global oil market (see Figure 1, 2).

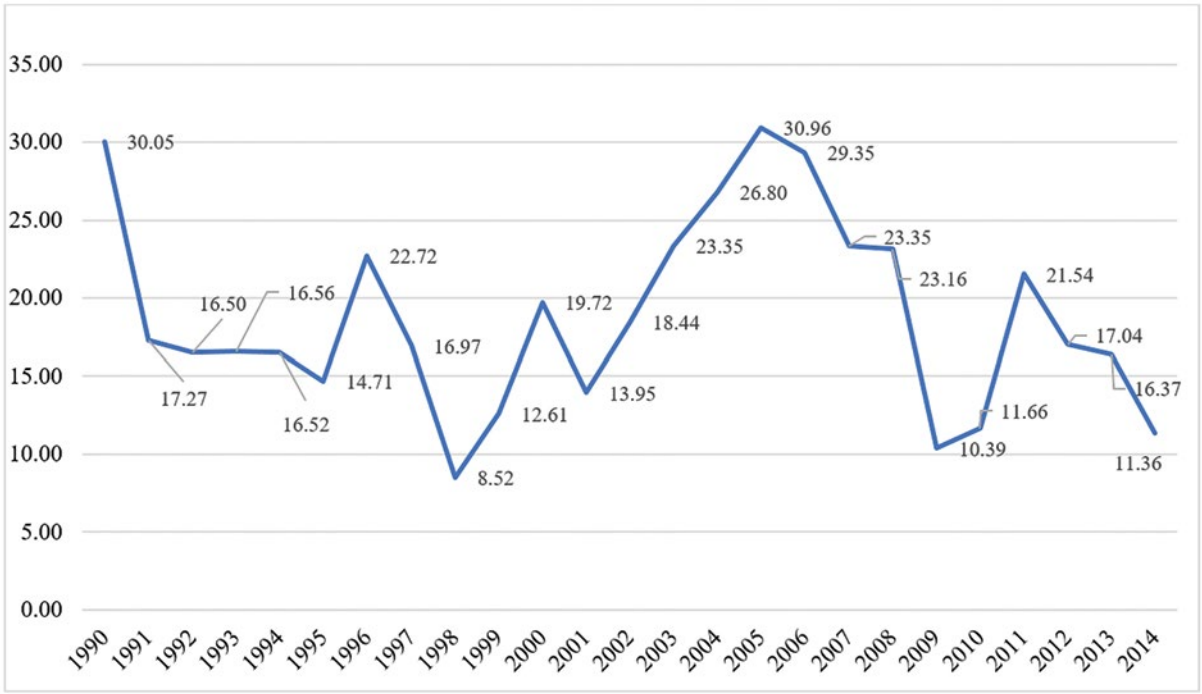
15 Sachs, J. D., Warner, A., (1999), pp. 43-76.; Smith, M. (2013, January 11). Venezuela, Oil and Chavez: A Tangled Tale. Available at: <www.oilprice.com>; Smith, B., Waldner, D. (2021). Rethinking the Resource Curse. Cambridge University Press: London, UK.

16 Beblawi, H. (1987). The Rentier State in the Arab World. Arab Studies Quarterly, 9(4), pp. 383–398. Available at: <http://www.jstor.org/stable/41857943>; Yates, D. A. (1996). The Rentier State in Africa: Oil Rent Dependency and Neo-Colonialism In the Republic of Gabon. Africa World Press. Trenton: NJ.; Losman, D. L., pp. 427-445; Wilson, J., pp. 400-401.

17 El-Katiri, L. (2014). The Guardian State and its Economic Development Model. Journal of Development Studies, 50:1, pp. 22-34; Wilson, J. (2015). p. 405.

18 Di John, J. (2010). p. 79.

FIGURE 2. OIL RENTS (% OF GDP)



Source: Figure is the author's own. Data from World Bank (2022), World Development Indicators database

TABLE 1. TOP TEN COUNTRIES WITH THE LARGEST OIL RESERVES IN 2019 (THOUSAND MILLION BARRELS)

RANK	COUNTRY	RESERVES	% OF WORLD TOTAL
1	Venezuela	303.8	17.5
2	Saudi Arabia	297.6	17.2
3	Canada	169.7	9.8
4	Iran	155.6	9.0
5	Iraq	145	8.4
6	Russian Federation	107.2	6.2
7	Kuwait	101.5	5.9
8	United Arab Emirates	97.8	5.6
9	United States	68.9	4.0
10	Libya	48.4	2.8

Source: Table is the author's own. Data from BP Statistical Review of World Energy (2020), p. 14.

PDVSA stands out as the quintessential example of a rentier oil company. Venezuela's supply of oil is substantial, compared to both the size of its economy and most other countries.[19] In 2019, crude petroleum accounted for 83.1 percent of the value of Venezuelan exports. The industry represented 88.3 percent of all export earnings, including refined petroleum, with the highest contribution made in 2013, at nearly 96 percent (Figure 1). Figure 2 displays Venezuela's oil rents as a percentage of GDP in 1990-2014, starting with the oil opening of the 1990s. Table 1 shows the top ten countries with the largest oil reserves in 2019. Table 2 shows the largest oil producers in 2019. The Orinoco Belt is by far the largest and remaining source of oil in Venezuela, with a reputation for largest extra-heavy oil deposit in the world. Compared to lighter oil, extra-heavy oil consumes more water and energy, is costly to produce, and generates higher mineral pollution and other waste by-products.[20]

19 Hults, D. R. (2011). Petróleos de Venezuela, S.A. (PDVSA): from independence to subservience. 436, in D. G. Victor, D. R. Hults, & Thurber M. C. (eds). Oil and Governance: State-Owned Enterprises and the World Energy Supply. Cambridge University Press, pp. 418-477.

20 Hults, D. R. (2011). p. 437.

TABLE 2. THE TOP TEN LARGEST OIL-PRODUCING COUNTRIES IN 2019 (THOUSANDS OF BARRELS PER DAY, B/D)

RANK	COUNTRY	OUTPUT	% OF GLOBAL OUTPUT
1	United States	17045	17.9
2	Saudi Arabia	11832	12.4
3	Russian Federation	11540	12.1
4	Canada	5651	5.9
5	Iraq	4779	5.0
6	United Arab Emirates	3998	4.2
7	China	3836	4.0
8	Iran	3535	3.7
9	Kuwait	2996	3.1
10	Brazil	2877	3.0

Source: Table is the author's own. Data from BP Statistical Review of World Energy (2020), p.16.

2. THEORETICAL ARGUMENT: THE GOVERNMENT-BUSINESS RELATIONS

Given Venezuela's over-reliance on oil income, it is imperative to understand the geopolitics of oil and the multitude of stakeholders interacting with the state oil company. As summarized above, the rentier theory predominantly focuses on the national government ('rent-seeking elites') and tends to disregard other stakeholders, especially transnational, and their institutional environments that might shape the dynamics of resource dependency. The political capture argument is implicitly deterministic in that it does not consider the potential conflicts of interest or, inversely, mutual dependency between the government and business relations. Various stakeholders—NOC, national authorities, private multinational firms, and their home and host governments—actively shape how the government extracts oil income. Other studies of government interventions in NOCs have analyzed the outcomes, considering the factors of capital intensity, cost structure, and risk exposure in the oil industry. Rather than simply reacting to national interests, Noreng[21] suggests that senior executives of NOCs actively strive for independence from their governments' resource dependency analysis; however, it doesn't sufficiently explore how rent-seeking politicians are limited in their ability to continually capture or influence oil policy.[22]

Furthermore, NOCs are unique economic structures. Their decision-making depends on the inherent risks involved in the oil sector, such as geological uncertainty, price volatility, and geopolitical factors. These factors limit government control over oil. Furthermore, exploration, extraction, transportation, and refining affect the cost structure of firms. The global oil market dynamics, including supply and demand, global competition, and the influence of organizations like OPEC, constantly interact with government influence on NOC. In this regard, this paper follows Singh and Chen in viewing NOCs as "complex organizations that bear new developmental capacities rather than vessels of rent-seeking interest".[23] Originating in Evans,[24] our view of the NOC aligns with the institutional theory of the firm as having an 'embedded autonomy' (EA) in the local and institutional environment of the global oil market. According to Styhre, EA implies that modern corporation is embedded in a variety of social practices and stakeholders that are "simultaneously anchored in, for example, corporate legislation and regulatory practices, on the national, regional... and transnational levels, while at the same time being granted the right to operate with significant degrees of freedom within legal-regulatory model".[25]

The institutional theory of the firm provides a dynamic and contextual framework for understanding the corporate strategies followed by

21 Noreng, O. (1994). National Oil Companies and Their Government Owners: The Politics of Interaction and Control. The Journal of Energy and Development, 198, Spring, Vol. 19, No. 2, pp. 197-226.

22 Di John, J. (2010). pp. 83-86.

23 Singh, J. M., Chen, G. C. (2018). State-owned enterprises and the political economy of state–state relations in the developing world. 1077, Third World Quarterly, 39:6, pp. 1077-1097.

24 Evans, P. (1995). Embedded Autonomy: States and Industrial Transformation. Princeton University Press: New Jersey, USA.

25 Styhre, A. (2019). p. 1.

NOCs in various contexts or in different periods in time. It highlights the dynamic interaction in the local and international environments—both the mutually dependent and contradictory relations between the economy, firm, and their state owners. As exemplified by PDVSA, most National Oil Companies (NOCs) are "legally independent firms with direct ownership by the state",[26] which often leads to highly restricted management autonomy. However, how much the NOC depends on the global economy can also play a significant role in its independence from the government. The nature of global political landscapes determines the modalities of interaction between NOCs and the destinations of their FDI, as well as their engagement with home and host state authorities.

Synthesizing the institutionalist analysis presented above with the geopolitics of power, this paper advances the following argument: *PDVSA's corporate strategy has been shaped by its dynamic relationships within the local institutional environment, global conditions, and the company's investment strategy, all within the framework of its long-standing reliance on the U.S., particularly the North American oil market. This has led to a persistent crisis for the company, reflecting the ever-changing geopolitics of oil and the challenges of overproduction in a resource-dependent economy.*

3. INSTITUTIONAL STAKEHOLDERS: GOVERNMENT AS 'SOLE OWNER'

Since the onset of Chavista administration in 1999, PDVSA has been instrumental in channeling the oil wealth to support both the Venezuelan Treasury and the public.[27] Rosales refers to Venezuela as an "example of a neo-extractivist country that pursues a developmental model based on wealth redistribution sustained by oil rents".[28] As stated in its original governance (Nationalization Law of 1976), PDVSA is fully owned by the government, which controls all the company's shares. PDVSA's common stock is not publicly traded; "Pursuant to Article 303 of the Venezuelan Constitution", the company's "shares may not be transferred or encumbered".[29] Since the oil industry generates a substantial portion of foreign exchange and funds the state budget, it would have been impossible to import the goods necessary to satisfy the population's basic needs without oil income. After benefiting from the commodity boom during the 2000s, Venezuela used the oil windfall to advance 'economic populism', i.e., prioritizing social programs and expanding direct government subsidies for energy and food through PDVSA, which provided oil at lower prices to the domestic market. While other presidents also used PDVSA as a political tool to subsidize domestic consumption, Chavez substantially increased debt as a share of GDP by taking on debt and printing money.[30] The state not only used oil to buy influence abroad through the *Petrocaribe* alliance, but also to secure legitimacy at home by redistributing income directly with revenues from PDVSA.

Oil strategy remained pivotal to 'nationalist reform policy', particularly as oil prices began to rise in the early 2000s. According to Lopez-Maya,[31]

26 Cuervo-Cazurro, A., Inkpen, A., Musacchio, A., Ramaswamy, K. (2014). Government as Owners: State-owned multinational companies. 923, Journal of International Business Studies, Vol. 45, August, pp. 919-942.

27 Mares, D. R., Altamarino, N. (2007). Venezeula's PDVSA and World Energy Markets: Corporate Strategies and Political Factors Determining Its Behavior and Influence. The James Baker III Institute for Public Policy, Rice University, March, p. 15; Hertog, S. (2010). Defying the Resource Curse: Explaining Successful State-Owned Enterprises in Rentier States. 261, World Politics, Vol. 62, No. 2, April, pp. 261-301; Lander, E. (2016). The implosion of Venezuela's rentier state. Transnational Institute New Politics Papers. Available at: <https://www.tni.org/en/publication/the-implosion-of-venezuelas-rentier-state>.

28 Rosales, A. (2016). Deepening Extractivism and Rentierism: China's Role in Venezuela's Bolivarian Developmental Model. 560, Canadian Journal of Development Studies, Vol. 37, Issue 4, 560-7, December.

29 SEC Filing. (2016). PDVSA: Petróleos de Venezuela, S.A. SEC, 128, Edgar Archives. Available at: <https://www.sec.gov/Archives/edgar/data/906424/000119312516712239/d171369dex99t3e.htm>.

30 CRS. (2021, April 28). Venezuela: Background and U.S. Relations, p. 2. Available at: <https://sgp.fas.org/crs/row/R44841.pdf>.

31 Lander, L., Lopez-Maya, M. (2002). Venezuela's Oil Reform and Chavismo. NACLA Report on the Americas, 36 (1): 21–23.

there were four main attributes of Chavez's energy reform. A primary goal of the reform was to centralize oil policy design and implementation within the executive branch. The goal was to reverse the 1990s market liberalization by placing PDVSA under the Ministry of Petroleum and transforming it into the sector's 'political leader'. This action would soon be challenged by PDVSA managers who did not want to give up the power they had acquired under *La Apertura Petrolera*. Second, the oil reform sought to maximize oil rent by privileging royalties on sales over taxes on profits. A persistent and worrisome drop in oil income occurred during the 1990s, due to revenue being generated through taxes rather than direct royalties. Besides, depending on international prices and volume of production, royalties involve much simpler processes, whereas taxes are subject to more complicated accounting methods. Third, the reform also aimed to bolster Venezuela's commitments to OPEC. Fourth, and finally, the reform aimed to slow down the trend towards privatization and deregulation of PDVSA that was in motion but failed to materialize during the 1990s. The last two objectives became a source of conflict with the US government over time.

While Chávez proclaimed a move towards '21st Century Socialism', his 'rentier socialism' mirrored the state capitalism of Carlos Pérez's first presidency in the 1970s, a period marked by soaring oil prices. Like Pérez's *Plan of the Nation* (*La Gran Venezuela*), Chávez's policies re-centralized the petrostate, cancelled debts, and nationalized oil projects. The commodity boom was short-lived, and by the time oil prices began to fall in the 1980s, it left Venezuela indebted and poor.[32] Using oil revenue to pay for generous social welfare programs and nationalization of the oil industry, Perez's first presidential term (1974-1979) was called 'Saudi Venezuela'. In his second term (1989-1993), Perez adopted IMF austerity policies and privatization reforms; oil prices declined, and the people turned against the government in the same way they have turned against the current president, Nicolas Maduro.[33] Inaugurated to a five-year term in February 1989, Perez became the target of massive protests and street violence, which paved the way for Hugo Chávez's attempted coup and subsequent rise to power from 1998 to 2013.[34]

PDVSA began to lose autonomy as salient frictions within the government surfaced at the onset of Chavez's arrival, which culminated in a big oil strike in December 2002. Also known as the 'oil lockout', the strike led to the temporary shutdown of PDVSA for two months.[35] Facing an undemocratic backlash, PDVSA overhauled the entire organization just to solidify the state control of the oil industry. Chavez replaced PDVSA's board with political allies and merged it with the Ministry of Petroleum. After assuring that he would be directly involved in making decisions about the way PDVSA should run its business, Chavez fired nearly 18,000 workers (around 40 percent of PDVSA's skilled employees) who participated in the strike.[36] The economic consequences of this action were dire. In the first quarter of 2003, Venezuela's GDP diminished by 27 percent, forcing the country to import oil to satisfy domestic demand, while unemployment increased by a third, reaching 20.3 percent.[37]

The main difference in oil policy under Chavez was the degree to which PDVSA subsidized social programs for the most marginalized segments of the population. After purging the company of political opponents in 2003, PDVSA still managed to bring in large amounts of oil revenue due to high oil prices and large crude reserves. The overhauled PDVSA had greatly extended responsibilities to the state, including a mandate that PDVSA finance and manage social programs known as *Misiones Bolivarianas* (*Bolivarian Missions*). Progressive, partially effective, and 'clientelistic' in nature, the *Misiones* provided aid to the country's lower classes through literacy training, in-

32 Lopez-Maya, M. (2014). p. 74.

33 The Independent. (2010, December 29). Carlos Andres Perez: President of Venezuela during the oil boom who was later forced out of office.

34 Sullivan, M. P. (2009, July 28). Venezuela: Political Conditions and U.S. Policy. Congressional Research Service (CRS), 3-4, RL32488, Washington, DC.

35 Smith, M. (2013, January 11). Venezuela, Oil and Chavez: A Tangled Tale. Available at: <www.oilprice.com>.

36 Kott, A. (2012). Assessing Whether Oil Dependency in Venezuela Contributes to National Instability. Journal of Strategic Security, Vol. 5, No. 3, Fall, pp. 69-86.

37 Jones, B. (2007). Hugo! The Hugo Chavez Story from Mud Hut to Perpetual Revolution. Steerforth Press, Hanover: New Hampshire Jones, p. 43.

frastructure projects, agricultural activities, and health care. In some cases, PDVSA's responsibilities for its social contributions were excessive. From 2008 onward, PDVSA financed two key operations through a subsidiary: a 'price-controlled food distribution network'[38] and *Fonden-Fondo de Desarrollo Nacional* (*National Development Fund*), a politically motivated program with military participation. Founded in 2005, *Fonden* served as 'off-budget military funding' for economic development.[39]

Benefiting from the commodity boom, one can understand that the PDVSA could tolerate greater public spending on ambitious social programs. At the peak of oil prices, Venezuela made important strides in reducing inequality. From 2003 to 2008, the company spent more than $23 billion on social programs. PDVSA's social investments improved some of the social indicators, such as tripling of spending per capita among households.[40] Over 5.25 years upon takeover, real GDP grew by 94.7% or 13.5% annually, which was considered remarkable by international standards among some observers.[41] Poverty decreased from 50 percent in 1998 to about 30 percent in 2014. The Gini index was indicative of major changes as well. In 1998, it was 0.49, but by 2012 it had declined to 0.40 (smaller numbers indicate greater equality), which the World Bank[42] regarded as one of the lowest in Latin America. Although this gave some analysts the impression that Venezuela was becoming 'socialist', these social programs have been criticized as being temporary and unable to address structural inequalities that are intrinsic to the Venezuelan economy.

4. INTERNATIONAL STAKEHOLDERS: FROM 'HANDS OFF' TO 'OBSOLESCING' BARGAINING

PDVSA's corporate governance is rooted in the institutional framework for the energy sector and the merger of multinational companies that controlled oil production before 1976. In 1976, President Carlos Perez nationalized the oil industry, creating the state-owned PDVSA as a holding company for a group of oil and gas companies. Even though the law began expropriation by terminating oil MNE concession agreements, the oil industry was structured as it had been before nationalization—all private firms with operating licenses were fully compensated and converted into 15 state-owned companies. PDVSA was formed as a central company with 14 affiliates. For instance, Standard Oil became Lagoven, Shell became Maraven, Mobil became Llanoven, and so on.[43] PDVSA enjoyed the status of a 'commercial entity', independently managed and staffed with the local workforce of the former companies.[44] As a result, "corporate structures that existed before nationalization were maintained while Article 5 of the Nationalization Law left room for foreign involvement in the Venezuelan oil industry as long as it was deemed to be in the interest of the Venezuelan state".[45]

During the 1990s, when oil prices declined, PDVSA took major steps to expand foreign operations and liberalize the oil sector as part of the government's *Apertura Petrolera*. Given the extra-heavy crude in the Orinoco Oil Belt, which entailed heavy extraction and refining costs, the oil sector desperately needed joint ventures. PDVSA's leaders, seeking to solidify management autonomy, successfully lobbied for the 'Opening' of the oil industry to foreign investors for the first

38 Hults, D. R. (2011). p. 434.

39 Tian, N., Lopes da Silva, D. (2019, April 2). The crucial role of the military in the Venezuelan crisis. Available at: <https://www.sipri.org/commentary/topical-backgrounder/2019/crucial-role-military-venezuelan-crisis>.

40 Kott, A. (2012). p. 79.

41 Malleson, T. (2010). Cooperatives and the 'Bolivarian Revolution' in Venezuela. Affinities: A Journal of Radical Theory, Culture, and Action, 157, Vol. 4, Number 1, Summer, pp. 155-175.

42 World Bank. (2017). The World Bank in Venezuela. Available at: <http://www.worldbank.org/en/country/venezuela/overview>.

43 Lander, L. E. (2007). Venezuela's balancing act: Big oil, OPEC and national development. NACLA Report on the Americas, 25, Vol. 34, Issue 4, (Jan/Feb): 25-30.

44 Giusti, L. E. (1999). La Apertura: The Opening of Venezuela's Oil Industry. Journal of International Affairs, Fall, Vol. 53, No. 1, pp. 117-128; Ravell, A. F. (2011). A brief overview of Venezuela's Oil Policies. Available at: <https://www.lexology.com/library/detail.aspx?g=01cf61f2-9591-4ac3-9ceb-59ac37090e13>.

45 Wiseman, C., Beland, D. (2010). p. 144.

time since 1976. As Giusti, the former CEO of PDVSA noted,[46] *Apertura* partially privatized PDVSA by permitting operational service agreements and strategic associations ('equivalent to joint ventures but requiring congressional approval'), all signed with private — mostly foreign — investors, including ExxonMobil, ConocoPhillips, Shell, BP, Equinor (then Statoil), Total, Repsol YPF, China National Petroleum Corp.[47] Depending on the type of agreement, the government offered incentives to participating foreign companies that included "general corporate tax regime, reduced royalty periods, and access to international arbitration".[48] Key *Apertura* deals included ExxonMobil and ConocoPhillips profit-sharing agreements in La Ceiba and the Coronoco fields, the joint venture with Veba Oel in Germany, and the acquisition of CITGO's share in the US.[49]

Apertura's oil deals drew criticism for potentially undermining national sovereignty. In contrast, after Chavez, PDVSA's dealings with multinational enterprises (MNEs) demonstrated 'obsolescing bargain' dynamics. Increasingly becoming subservient to the state, PDVSA adopted in 2001 the controversial *Hydrocarbons Organic Law* (HOL). HOL established a mechanism to assign a leading role for PDVSA in all new private investments, further enabling it to lead the expropriation process. Under the law, either the state directly (through PDVSA) or mixed companies (*Empresas Mixtas)*—joint ventures where PDVSA had a majority participating stake—would carry out all upstream oil activities. Such activities required majority PDVSA ownership (at least 51 percent) of all future joint exploration and production ventures, as well as the payment of higher royalties by international oil companies. While HOL mandated that 'only' PDVSA could commercialize and export crude oil, it still allowed private corporations to carry out downstream operations, including the exportation of refined products or upgraded oil. The HOL also raised the royalty rate to 30 percent from 16.67 percent and lowered the income tax rate to 50 percent to offset the effect of the increased royalty. Although the Chavez government assured investors that HOL would not retroactively apply to existing contracts or projects, it "created a more limited role for investors than the *Apertura* contracts had provided. It also limited the applicability of international arbitration".[50]

Monaldi et al[51] argue that it took nearly 5 years for Chavez to complete the expropriation process. In the case of Venezuela, commodity boom seemed crucial but various factors created strong incentives PDVSA's nationalization, including 1) the end of the investment cycle in the oil sector; hence, the need for placement of sunken investments, 2) significant increase in the price of oil within the context of *Apertura* contracts that were 'fiscally regressive', 3) weak 'deterrence' of international arbitration because of the grave short-term gains against the low cost of nationalization (i.e., MNE compensation claims and legal fees under bilateral treaties), 4) delays in taking absolute control of formerly autonomous PDVSA and using it towards renationalization. Against an oil price increase from 17$ to 37$ per barrel between 1999 and 2004, the royalty rate was just 34 percent, implying that PDVSA benefited less from the global price boom than foreign MNEs.[52]

In the early 2000, PDVS reversed the market-oriented reforms that had been implemented in the 1990s. Although the 2001 HOL was consistent with the Venezuelan law that prohibited the retroactive application of laws to existing contracts, nationalization accelerated with the announcement of a new oil strategy in October 2004.[53] PDVSA had asked in January 2002 some of the foreign companies to cut output to help meet its OPEC production quota; Venezuela agreed

46 Giusti, L. E. (1999) p. 188.

47 Jaffe, A. M. (2019, February 21). Amid Political Uncertainties, Venezuela's Oil Industry Situation Worsens, Council on Foreign Relations. Available at: <https://www.cfr.org/blog/amid-political-uncertainties-venezuelas-oil-industry-situation-worsens>.

48 Ravell, A. F. (2011).

49 CRS. (2021). p. 10.

50 Monaldi, F., Hernandez, I., La Rosa, J. (2020). The Collapse of the Venezuelan Oil Industry: The Role of Above-Ground Risks Limiting FDI, Working Paper. 11, Center for Energy Studies, Rice University's Baker Institute for Public Policy.

51 Monaldi, F., Hernandez, I., La Rosa, J. (2020). p. 13.

52 Koivumaeki, R. I. (2015). Evading the Constraints of Globalization: Oil and Gas Nationalization in Venezuela and Bolivia. Comparative Politics, 113, Vol. 48, No. 1, October, pp. 107-125.

53 Koivumaeki, R. I. (2015). p. 113.

to trim output by 6 percent, or 173,000 barrels a day, as part of OPEC's cut of 1.5 million barrels a day.[54] In late 2004, the government declared major changes to all *Apertura* contracts—32 operating agreements signed during the 1990s— technically forcing investors into renegotiation of existing projects. Legislation in 2006 raised the royalty and income taxes on the four strategic associations to 33.35 percent and 50 percent, respectively.[55] It also increased the royalties on the Orinoco belt heavy oil projects from 1 percent to 16.67 percent. Then it imposed an 'extraction' tax in 2006, which included 1/3 of the value of all hydrocarbons produced, and a 'windfall' tax in 2008.[56]

By the end of 2005, major MNEs holding operating agreements signed 'transitory agreements' to migrate their existing contracts to PDVSA, with the noticeable exception of ExxonMobil, which had resented the royalty hikes and contractual changes earlier. Chevron, like other major foreign oil companies, agreed to pay higher royalties and taxes and gave up majority interests in their projects.[57] The 2001 HOL had already provided the background of renationalization with a minimum of 51 percent stake for PDVSA in the mixed companies. However, the government further claimed that PDVSA could take a bigger stake depending on the level of foreign investments. In October 2005, Oil Minister Rafael Ramirez pressured foreign MNEs to agree to transfer their contracts to joint ventures by the December 30th deadline, warning that if they failed to do so, they should either leave the country or face state takeover of their operations.[58]

In 2007, PDVSA concluded the partial expropriation process. This resulted in a major increase in state ownership and control over oil operations as well as a significant decline in privately owned oil production. Congress approved the remaining batch of joint venture agreements that gave CVP, a PDVSA unit, a minimum of 60% share in most of the new projects. During this takeover, PDVSA increased its ownership in four of the strategic associations from 40 percent to an average of 78 percent. Total, Statoil, Chevron, and BP agreed to give up their shares and have remained as minority partners in their Venezuelan projects. By contrast, companies like Exxon Mobil and ConocoPhillips refused to agree to PDVSA's terms and pulled out of joint ventures. After refusing to relinquish controlling stakes, they faced full expropriation of their assets, in return for a book value reparation, considerably below market value. Exxon and Conoco, after suing PDVSA and the Chavez government, escalated their dispute by filing for arbitration in international courts.[59]

5. STAGNATION AND THE OVERPRODUCTION CRISIS

PDVSA has been facing an acute crisis since 2017. Its revenues have dropped. The reasons include shipping issues for oil, poor maintenance, fewer workers, and US sanctions on selling crude oil (2019-2022). At a time when greater FDI was needed in the oil industry, PDVSA took great risks in forcing foreign companies to pay higher taxes and produce oil in joint ventures that were majority-owned by the state. Such contractual changes not only caused uncertainty by leading to falling output from the joint ventures, but they also reduced reinvestments needed just to maintain oil production—$2.5 billion per year. In October 2005, PDVSA announced that it expected joint ventures to increase production up to 50,000 b/d under the new contract. Yet, these companies typically produced around 500,000 b/d during the oil opening in the 1990s (see Figure 3).[60]

Since Maduro's succession to the Presidency in 2013, the oil industry has descended into further economic turmoil. The oil-dependent state began to deteriorate rapidly as hyperinflation and severe food shortages set in. The World Bank issued a report calling attention to Venezuela's current woes, which were a product of declining oil prices. In addition, it blamed the Maduro government

54 Associated Press. (2002, January 10). Venezuela asks foreign oil companies to trim output.

55 Stein, P. (2009, November 16). Venezuela: The Background. APS Review of Oil Market Trends, Vol. 73, Issue 20.

56 Monaldi, F., Hernandez, I., La Rosa, J. (2020). p. 12.

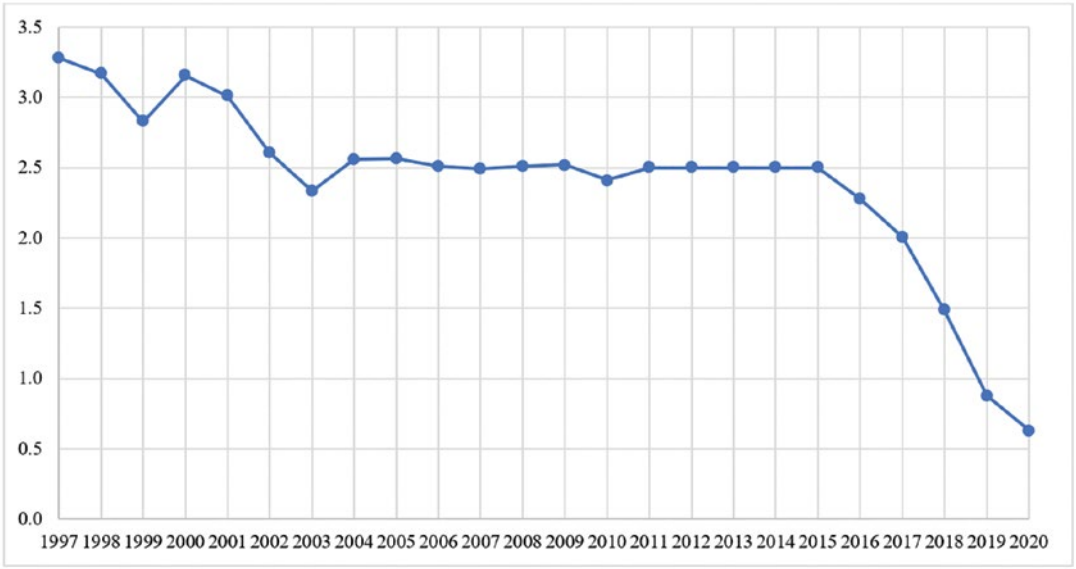
57 Parraga, M. (2013, September 4). Venezuela lacked good faith ConocoPhillips Seizure-World Bank. Reuters.

58 Kerr, J. (2006, January 3). Venezuela Enters New Year with New Oil Contracts. IHS Global Insight.

59 Stein, P. (2009, November 16); Monaldi, F., Hernandez, I., La Rosa, J. (2020). p. 12.

60 Kerr, J. (2006, January 3).

FIGURE 3. VENEZUELA'S ANNUAL AVERAGE CRUDE OIL PRODUCTION, 1997-2020 (MILLION BARRELS PER DAY, B/D)



Source: Figure is the author's own. Data from the U.S. Energy Information Administration (2020).

for failing to create a 'savings fund' to offset what might have been an expected downturn. World Bank further noted that "during the economic boom, Venezuela did not accumulate savings to mitigate a reversal in terms of trade or to cushion the necessary macroeconomic adjustment".[61] However, there were probably few reasons for the government to anticipate such a development since 'peak oil' was widely accepted as a probable outcome in world supplies. To some extent, Venezuela was a victim of a massive expansion in fracking that has made the US the world's largest oil and gas exporter. That said, there was no doubt that the pro-Chavista government made little attempt to diversify economically. Food continued to be imported, and manufacturing made little contribution to GDP. The underdevelopment of non-energy output is, of course, a hazard for rentier states historically.

Oil prices have declined precipitously in Venezuela since the end of the commodity boom. In 2013, a barrel of Venezuelan crude oil sold for $100. A year later, the price had dropped to $88.42, and another year later it was $44.65. In early 2016, it had plummeted to $24.25. Such a steep decline would prompt most governments to rethink their development model, but the Venezuelan government has shown no signs of moving away from oil dependency so far. On the other hand, even if it did conceive of an alternative, funding for new infrastructure would be difficult to come by given the nation's virtual bankruptcy, sharp drop in FDI, and surmounting economic problems.[62] Such problems have been so serious that by January 2017, Venezuelan oil tankers with 4 million barrels of oil and other fuels were abandoned in the Caribbean Sea. PDVSA lacked the cash to pay for safety inspections for ships carrying oil exports.[63] Figure 3 shows Venezuela's declining annual average crude oil production from 1997 to 2020. If the global supply of oil had remained constant, Venezuela's problems would not have been so acute. However, new technologies and offshore drilling created a spike in production that defied 'peak oil' expectations. By late 2015, supply mounted to 97 million barrels per diem, exceeding demand by more than a million per day. This surplus led to a severe drop in oil prices.[64]

61 World Bank. (2017). The World Bank in Venezuela. Available at: <http://www.worldbank.org/en/country/venezuela/overview>.

62 Lander, E. (2016). pp. 2-3

63 Gramer, R. (2017, January 26). Venezuela is so Broke it can't even Export Oil. Foreign Policy.

64 Gokay, B. (2017, April 10). Venezuela crisis is the hidden consequence of Saudi Arabia's oil price war. Available at: <https://theconversation.com/ven-

6. TRANSNATIONAL OIL ALLIANCES: RUSSIA AND CHINA IN THE GLOBAL OIL MARKET

Since 2015, PDVSA has been saddled with debt that appears unlikely to be paid from the state treasury. October-November 2017 was the acid test for the government since it was the deadline for paying bondholders $3.5 billion. This has put downward pressure on PDVSA bonds, which are a major source of revenue historically for the state.[65] Perhaps the only mitigating factor in this financial crunch was the apparent willingness of the Russian government to restructure Venezuelan debt to Russia, which stood at $3.15 billion. Signed in November 2017, the debt deal stipulated full repayment in ten years and 'minimal' repayments over the next six years.[66]

Rosneft, Russia's second biggest state-controlled oil company, was one of the largest foreign creditors and a 'financial savior' of the Maduro regime. As early as 2013, President Putin expressed greater financial interest in Venezuela when the CEO of Rosneft, Igor Sechin, announced plans to invest $13 billion in Venezuelan oil and gas assets in the next 5 years. Russia's involvement in PDVSA, through Rosneft and a consortium of private Russian oil companies, was aimed at: 1) promoting Russian geopolitical interests in the Caribbean region, 2) advancing economically feasible investment deals.[67] In early 2016, Rosneft announced a partnership with PDVSA in Petro Monagas, an investment of $500 million in the Orinoco Oil Belt, for offshore gas drilling.[68] Rosneft also advanced prepayments to PDVSA for crude and refined products when China, Venezuela's other major ally, delayed its payments. In 2014, PDVSA received 6.5 million dollars in loans and advanced payments from Rosneft when the Maduro government was experiencing foreign currency shortages. In December 2016, Rosneft "also provided a $1.5 billion loan collateralized with 49.9 percent of Citgo Holdings, PDVSA's refinery in the US".[69]

China is PDVSA's other major financial supporter, although, unlike Russia, it has declined to restructure Venezuela's outstanding loans.[70] China and Russia's relations with Venezuela are part of a global strategy to recruit allies in building a new multipolar, anti-US world order. While China seems to be more commercially driven in its foreign investments, Russia seeks both commercial and geopolitical interests in Venezuela, one which has "grown with the intent to disrupt western democracies and achieve a firm foothold in the Western Hemisphere's largest oil reserve".[71] China has provided Venezuela with economic and political support in exchange for future oil shipments. According to Guevara, "with roughly $67 billion invested since 2007, China has become a main source of Venezuela's external financing, and an important partner of its oil-based economy".[72] Indeed, in 2001, Venezuela was the first Latin American country to form a 'strategic development partnership' with China,[73] followed by a series of bilateral trade, infrastructure, and energy co-operation deals.

Excessive reliance on oil rent, with a sharp drop in FDI (post-2006) has deepened PDVSA's dependence on Chinese financial support. An example of Asian foreign aid, China seeks to promote FDI through 'bilateral lending' and 'opportunistic' ('state-to-state')[74] alliances rather than through

ezuela-crisis-is-the-hidden-consequence-of-saudi-arabias-oil-price-war-82178>.

65 Cunningham, N. (2017, August 8). Venezuela's deteriorating crisis could send oil to $80 a barrel. Business Insider.

66 Gallas, D. (2017, November 15). Russia and Venezuela agree debt deal. BBC News.

67 De La Cruz, A. (2020, April 10). Rosneft's Withdrawal amid U.S. Sanctions Contributes to Venezuela's Isolation. Available at: <https://www.csis.org/analysis/rosnefts-withdrawal-amid-us-sanctions-contributes-venezuelas-isolation>.

68 Negroponte, D. V. (2018, June 19). Russian Interests in Venezuela: A New Cold War? American Quarterly.

69 De La Cruz, A. (2020, April 10).

70 Labrador, R. C. (2019, February 5). Maduro's Allies: Who Backs the Venezuelan Regime? Council on Foreign Relations. Available at: <https://www.cfr.org/in-brief/maduros-allies-who-backs-venezuelan-regime>.

71 Negroponte, D. V. (2018, June 19).

72 Guevara, C. (2020, January 13). China's support for the Maduro regime: Enduring or fleeting? Atlantic Council.

73 Hermoso, J., Fermin. V. (2019, January 14). Venezuela-China explained: The Belt and Road. SupChina.

74 Rosales, A. (2018). Pursuing foreign investment for nationalist goals: Venezuela's hybrid resource nationalism. Business and Politics, 443, Vol. 20, Issue 3, pp. 438-464.

multilateral channels or US involvement. Such bilateral aid has been consistent with China's 'go-global strategy' of promoting Chinese firms internationally since 1998. The other goals have been to meet the country's long-term energy demands and secure access to raw materials.[75] Of particular importance is the energy deal signed in 2008 that would give a big boost to oil exports to China.[76] However, by 2012, PDVSA's underperformance allowed export of only 640,000 barrels of oil a day to China; 200,000 of that export revenue simply went to service the country's debts to China.[77] In the first quarter of 2018, China imported only 381,300 barrels of oil from Venezuela, hitting 'the lowest in nearly 8 years'.[78] Other recent deals include a $5 billion credit line from China to finance investments in infrastructure, electricity, and agricultural development, including a joint-venture agreement between the PDVSA and a Chinese state-owned company, Heilongjiang Xinliang.[79]

Paradoxically, China's 'go-global strategy' and bilateral diplomacy face limitations in Venezuela. The Chinese market potential has yet to be realized due to conflicts of interest in the global oil industry. In addition to limited refinery capacity, China has little proximity to Venezuela, which brings with it the high cost of transporting Venezuelan oil. The other obstacle is Venezuela's ability to pay sovereign debt, which undermines China's continued investments in the Orinoco Oil Belt. PDVSA only signed short-term sales contracts because of China's interest in cheap fuel oil, whereas PDVSA seeks to increase the price of its heavy oil products. Finally, China has "signaled its willingness to work with opposition leaders" (Juan Guaido) for debt repayment, which indicates China's declining confidence in the Maduro government.[80] Until China's potential is fully realized, Central and North America remain the most important markets for PDVSA's crude oil export.

7. CITGO: THE US OVERREACH AND SANCTIONS DILEMMA

Welcomed at one time for its charitable donations of fuel oil in the USA, CITGO has become a major player in the ongoing crisis with the US government. In the last decade or so, Venezuela's relationships with the US are the opposite of those with Russia and China, which are generally aligned with states considered America's adversaries. PDVSA bought CITGO in 1990, a Houston-based oil company that has been in business since 1910 and exports close to a million barrels of oil to the US annually. CITGO—fully owned PDVSA's subsidiary—accounts for the largest share of Venezuela's foreign downstream (refinery) operations in the US, along with operations in the Caribbean and Europe.[81] At its peak in 2007, Venezuela exported an average of 1.1 million b/d of crude oil to the US.

In the first round of sanctions that began in August 2017, the US issued "an executive order that limited access to debt capital and prevented PDVSA from receiving cash distributions from CITGO".[82] In January 2019, the White House imposed broader sectoral sanctions on PDVSA's crude oil shipments to the US. The sanctions were aimed at unseating President Nicolas Maduro, whose last election in 2018 the US viewed as illegitimate. Pursuant to President Trump's Executive Order, the US Treasury banned access to US financial markets and oil supplies for all PDVSA joint ventures and its subsidiaries, including a blockage on PDVSA's property under US jurisdiction and a ban on all US companies and individuals from 'engaging in transactions' with PDVSA[83]. As a result, all U.S. imports of Venezuela's crude oil were discontinued in March 2019.[84] In April 2019, the US Treasury's

75 Kaplan, S. B., Penfold, M. (2019). China-Venezuela Economic Relations: Hedging Venezuelan Bets with Chinese Characteristics. 6, Wilson Center, Washington D.C: United States, pp. 1-40.

76 Bull, W. (2008, September 25). Venezuela signs Chinese oil deal. BBC News.

77 Plummer, R. (2013, March 5). Hugo Chavez leaves Venezuela in economic muddle. BBC News.

78 Aizhu, C., Tan, F. (2018, June 15). Venezuela oil exports to China slump, may hit lowest in nearly 8 years: sources, data. Reuters.

79 Suggett, J. (2010, August 4). Latest Venezuela-China Deals: Orinoco Agriculture, Civil Aviation, Steel, and $5 Billion Credit Line. Available at: <www.venezuelanalysis.com>.

80 Kaplan, S. B., Penfold, M. (2019). p. 38.

81 US Energy Information Administration. (2019, January 7).

82 CRS. (2021). p. 22

83 CRS, (2022).

84 US Energy Information Administration, (2020).

Office of Foreign Assets Control (OFAC) took steps to exempt certain transactions from US sanctions under amended licenses that would allow "only transactions necessary for the maintenance of 'essential operations' through June 1, 2022".[85]

Even after securing special permissions, the ban on export authorizations for PDVSA's foreign partners negatively impacted US oil interests in Venezuela. Such an embargo left oil companies like Chevron, Eni, Repsol "with billions of dollars in unpaid dividends and debts that had been settled through Venezuelan oil cargos".[86] While hoping to unseat the Maduro government through economic sanctions, the White House left CITGO out of the equation from the beginning since it was a strategically important part of the American business. CITGO is the operator of three of the largest oil refineries that provide 750,000 barrels per day (b/d), including one in Chicago that is a regional energy hub. For instance, in 2015, CITGO provided 15 billion gallons of gasoline to American drivers.[87]

Given the strategic importance of CITGO to American oil interests, the US expects to carry on buying oil from PDVSA with little disruption. This depends on the continued viability of CITGO – PDVSA's most valued asset abroad. However, CITGO had already become liable for Venezuela's debt when foreign companies attempted to seize PDVSA's CITGO shares as compensation for expropriated assets in 2006-2007. Therefore, the US Treasury (OFAC) took further steps in October 2019 to safeguard CITGO "from seizure in legal challenges against Venezuela to preserve the asset for the interim government if it takes power".[88] This indicated that bondholders would be unable to recover their collateral, which consists of shares in CITGO, until January 22, 2020, even in the event of a default on those bonds. In May 2020, CITGO's new board, appointed by the interim (US-backed) government of Juan Guaido, reached an agreement with bondholders to prevent creditors from liquidating CITGO's assets until May 2020. OFAC extended the protection for CITGO through October 20, 2020.[89]

Furthermore, obstacles remain to the full lifting of US sanctions. Given the oil shortage caused by Russia's invasion of Ukraine in February 2022, President Biden initiated talks with Venezuelan officials about easing some of the sanctions before the expiry date (June 1, 2022). Around March 2022, traders were speculating that such a move might lead to the relaxation of restrictions on Venezuelan bond purchases as well. However, since the Biden administration does not officially acknowledge Maduro as the leader of Venezuela, US investors are still prohibited from buying the country's debt, unlike European investors who are aggressively buying the bonds.[90]

Ironically, US sanctions against PDVSA resulted in increased isolation and consolidation of power for the Maduro regime. The desired effect, namely the strengthening of the Guaido-led provisional government and a democratic transition, failed to materialize. Furthermore, the provisional government was unable to maintain control over CITGO's management. This makes CITGO's future uncertain, as the board of directors keeps changing and PDVSA tries to regain control of the company under any future settlement with the US.

8. POLICY IMPLICATIONS OF THE RESEARCH FOR OIL INDUSTRY MANAGERS

This paper has examined PDVSA's strategic importance for North America and its dependence on the US as a 'lender of last resort' and leading global trader. When PDVSA defaulted on sovereign bonds, the US kept CITGO secure by renewing exemptions from US sanctions. This prevented creditors from liquidating PDVSA's CITGO shares—'American cash cow' and the most valued asset PDVSA holds abroad.[91] Big US oil compa-

85 CRS, (2022).

86 International Business Times News. (2022, March 31). Exclusive-Venezuela's PDVSA Seeks Oil Tankers in Anticipation of US Sanctions Easing.

87 Jaffe, A. M. (2018, January 23). How Much Worse Can It Get for Venezuela's State Oil Firm PDVSA? Council on Foreign Relations. Available at: <https://www.cfr.org/blog/how-much-worse-can-it-get-venezuelas-state-oil-firm-pdvsa>.

88 CRS, (2021), p. 11.

89 CRS, (2021), p. 13.

90 Vizcaino, M. E., Yapur, N. (2022, March 8). Defaulted Venezuela Bonds Are Luring Buyers Betting on US Deal. Bloomberg.

91 Krauss, C. (2018, October 1). Venezuela's Crisis Imper-

nies like Chevron benefited from the exemption and further easing of US sanctions in 2022, which would help resume their operations in Venezuela. While Chevron remains committed to investing in Venezuela, CITGO appears to benefit significantly from reopening trade with PDVSA.[92] This goes contrary to the emergence of a multi-polar world order (China, Russia) that would undermine US oil interests in Venezuela.

US oil industry managers are capitalizing on the increasing tensions between PDVSA and its trading partners, which are occurring against the backdrop of Western sanctions on Russian oil. Although PDVSA has repeatedly expressed interest in increasing oil trade with China to diversify oil exports from the US, it must come up with a feasible strategy. Chinese and Russian investments are high risk and have far bigger liabilities than originally thought, as they are no longer reliable markets for Venezuelan oil. Even when oil prices were high, there were structural fault lines in PDVSA that would open further after prices dropped. Rosneft's exit from Venezuela in March 2020 amid US sanctions was a loss of financial and technical capacity for PDVSA.[93] On the other hand, given PDVSA's drop in oil production and the drop in oil prices after the commodity boom, China finds it harder to trust Venezuela with its outstanding loans (around $20 billion)[94] and may be even reluctant to make more oil investments. China seems to be "focused more on getting its payments back than strengthening its diplomatic relations".[95] Until China's potential is fully realized as a trading partner, North America remains the dominant market for PDVSA's crude oil export.

As for the recommendations and directions for future research, it is conceivable that as oil prices keep rising, PDVSA may once again achieve a modicum of normalcy. This is an area of research that needs to be further investigated. In June 2022, the US State Department gave the green light to two European companies, Italy's Eni and Spain's Repsol, to resume shipments of Venezuelan oil to Europe. This could potentially benefit US oil companies by helping to reduce Europe's dependence on Russia and redirecting some of PDVSA's shipments from China.[96] With recovering oil prices lately, "Venezuelan oil production recovered from a historically low level of 500,000 barrels per day (b/d) in 2020 to a yearly average of 636,000 b/d in 2021 and, most recently, 788,000 b/d in February 2022".[97] However, this still begs the question of how PDVSA can stave off another crisis that seems almost inevitable for rentier states based on oil.

CONCLUSION

Combining institutional theory of the firm with resource dependency analysis, this paper examined the evolving corporate strategy of Venezuela's state-owned oil company, PDVSA. It has examined the multitude of stakeholders involved in oil policy making, including local institutional actors and transnational oil interests. Certainly, obstacles remain to PDVSA's performance and potential for investment arising from rentier economy distortions, especially since the rise of President Chavez in 1998 and subsequently. As of August 2020, Venezuela produced 360,000 barrels a day (b/d) of crude oil (excluding condensates)—the lowest amount ever recorded since 1973. Several factors continue to drive down crude oil production, such as a lack of investments, maintenance problems in oil infrastructure, a shortage of heavy oil diluents, and loss of human capital. US sanctions in 2019 and 2020 decreased foreign investment and limited markets for Venezuelan oil.[98]

Since the easing of US sanctions in 2022, US oil industry managers need much stronger incentives to resume business talks with PDVSA. Because

ils Citgo, Its American 'Cash Cow'. New York Times.

92 Garip, P. (2021, August 12). Venezuela Negotiating Agenda in Crosscurrent. Argus Media.

93 De La Cruz, A. (2020, April 10).

94 Sigalos, M. (2019, February 7). China and Russia loaned billions to Venezuela — and then the presidency went up for grabs. CNBC.

95 Garcia, I. (2021, December 22). The Future of the Sino-Venezuelan Relationship: Make or Break? Harvard International Review.

96 Parraga, M., Spetalnick, M. (2022, June 6). U.S. to let Eni, Repsol ship Venezuela oil to Europe for debt. Reuters.

97 Palacios, L., Monaldi F. (2022, March 23). Venezuela Oil Sanctions: Not an Easy Fix Available at: <https://www.energypolicy.columbia.edu/research/commentary/venezuela-oil-sanctions-not-easy-fix#_edn6>.

98 US Energy Information Administration, (2020).

of the changing political climate and increased tariffs on Venezuelan oil under President Trump, however, these talks might be significantly delayed. To boost oil output, the Venezuelan government signed new oil deals in late 2018 with seven companies, akin to private investments ('operating agreements') nationalized by Chavez. Although the plan seemed like a gesture to allow more foreign participation, it faced several hurdles before the closing of the deal. Most of the companies involved were small and little known, with no recognized experience operating oil fields, and US sanctions have prevented experienced firms from working with PDVSA.[99]

With the resumption of diplomatic talks in 2022, the US can utilize other incentives, such as promoting private sector investments. Such investments should target stronger technical expertise, managerial, and organizational resources. In CITGO's case, for instance, "the United States could encourage the company to make targeted investments to update pipeline infrastructure in Venezuela".[100] Another significant challenge lies in creating compelling incentives for former PDVSA employees to return to work in Venezuela. Consequently, should a regime change occur, the central question becomes which oil companies will work with PDVSA, rather than focusing solely on FDI. However, domestic institutions and U.S. oil policy in Latin America could significantly affect the outcomes of these incentives.

Overall, this paper has argued that PDVSA's oil strategy can't overcome the paradox of "rentier socialism", geared towards using oil income as a windfall for development. In the long run, PDVSA's resource dependence and its alliance-based trading will only temporarily mask the underlying over-production crisis. Moreover, the US will struggle to control Venezuelan oil, a situation compounded by Donald Trump's executive order set to begin in early April 2025. This order mandated a 25% tariff on U.S. trades for any nation buying oil or gas from Venezuela.[101] In addition to higher oil prices in the US and reduced imports of Venezuelan oil, China (as the largest buyer of Venezuelan oil) will face greater costs, potentially reducing its imports of Venezuelan crude. With a loss of export income, the state-owned PDVSA is structurally limited in its ability to diversify resources and operate effectively in the global market.

99 Pons, C. (2018, September 10). Exclusive: Venezuela signs oil deals similar to ones rolled back under Chavez – document. Reuters.

100 Berg, R. (2021, October 12). The Role of the Oil Sector in Venezuela's Environmental Degradation and Economic Rebuilding. Available at: <https://www.csis.org/analysis/role-oil-sector-venezuelas-environmental-degradation-and-economic-rebuilding>.

101 Parraga, M. (2025, March 25). Oil loading slows at Venezuela's ports amid US tariffs, license termination, data shows. Reuters.

BIBLIOGRAPHY:

1. Acemoglu, D., Robinson, J. (2012). Why Nations Fail: The Origins of Power, Prosperity, and Poverty, ed. New York: Crown;
2. Aizhu, C., Tan, F. (2018, June 15). Venezuela oil exports to China slump, may hit lowest in nearly 8 years: sources, data. Reuters;
3. Associated Press. (2002, January 10). Venezuela asks foreign oil companies to trim output;
4. Beblawi, H. (1987). The Rentier State in the Arab World. Arab Studies Quarterly, 9(4). Available at: <http://www.jstor.org/stable/41857943>;
5. Berg, R. (2021, October 12). The Role of the Oil Sector in Venezuela's Environmental Degradation and Economic Rebuilding. Available at: <https://www.csis.org/analysis/role-oil-sector-venezuelas-environmental-degradation-and-economic-rebuilding>;
6. BP Statistical Review of World Energy. (2020). Statistical Review of World Energy 2020. 69th Edition. Available at: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2020-full-report.pdf>;

7. Bull, W. (2008, September 25). Venezuela signs Chinese oil deal, BBC News;
8. *Cardin, P. (1993).* Rentierism and the Rentier State: A Comparative Examination. McGill University, PhD thesis;
9. CEPAL. (2019). Bolivarian Republic of Venezuela: General Trends, in Economic Survey of Latin America and the Caribbean. Available at: <https://repositorio.cepal.org/bitstream/handle/11362/44675/144/EEI2019_Venezuela_en.pdf>;
10. CRS. (2021, April 28). Venezuela: Background and U.S. Relations. Available at: <https://sgp.fas.org/crs/row/R44841.pdf>;
11. CRS. (2022, May 23). Venezuela: Overview of U.S. Sanctions. Available at: <https://sgp.fas.org/crs/row/IF10715.pdf>;
12. Cuervo-Cazurro, A., Inkpen, A., Musacchio, A., Ramaswamy, K. (2014). Government as Owners: State-owned multinational companies. 923, Journal of International Business Studies, Vol. 45, August;
13. Cunningham, N. (2017, August 8). Venezuela's deteriorating crisis could send oil to $80 a barrel. Business Insider;
14. Dachevsky, F., Kornblihtt J. (2017). The Reproduction and Crisis of Capitalism in Venezuela under Chavismo. Latin American Perspectives, 44(1): 78-93;
15. De La Cruz, A. (2020, April 10). Rosneft's Withdrawal amid U.S. Sanctions Contributes to Venezuela's Isolation. Available at: <https://www.csis.org/analysis/rosnefts-withdrawal-amid-us-sanctions-contributes-venezuelas-isolation>;
16. Di John, J. (2010). From Windfall to Curse? Oil and Industrialization in Venezuela, 1920 to the Present. Pennsylvania University Press;
17. El-Katiri, L. (2014). The Guardian State and its Economic Development Model. Journal of Development Studies, 50:1;
18. Evans, P. (1995). Embedded Autonomy: States and Industrial Transformation. Princeton University Press: New Jersey, USA;
19. Gallas, D. (2017, November 15). Russia and Venezuela agree debt deal. BBC News;
20. Garcia, I. (2021, December 22). The Future of the Sino-Venezuelan Relationship: Make or Break? Harvard International Review;
21. Garip, P. (2021, August 12). Venezuela Negotiating Agenda in Crosscurrent. Argus Media;
22. Giusti, L. E. (1999). La Apertura: The Opening of Venezuela's Oil Industry. Journal of International Affairs, Fall, Vol. 53, No. 1;
23. Gokay, B. (2017, April 10). Venezuela crisis is the hidden consequence of Saudi Arabia's oil price war. Available at: <https://theconversation.com/venezuela-crisis-is-the-hidden-consequence-of-saudi-arabias-oil-price-war-82178>;
24. Gramer, R. (2017, January 26). Venezuela is so Broke it can't even Export Oil. Foreign Policy;
25. Guevara, C. (2020, January 13). China's support for the Maduro regime: Enduring or fleeting? Atlantic Council;
26. Hermoso, J., Fermin. V. (2019, January 14). Venezuela-China explained: The Belt and Road. SupChina;
27. Hertog, S. (2010). Defying the Resource Curse: Explaining Successful State-Owned Enterprises in Rentier States. 261, World Politics, Vol. 62, No. 2, April;
28. Hults, D. R. (2011). Petróleos de Venezuela, S.A. (PDVSA): from independence to subservience. 436, in D. G. Victor, D. R. Hults, & Thurber M. C. (eds), Oil and Governance: State-Owned Enterprises and the World Energy Supply. Cambridge University Press;
29. International Business Times News. (2022, March 31). Exclusive-Venezuela's PDVSA Seeks Oil Tankers in Anticipation of US Sanctions Easing;
30. Jaffe, A. M. (2018, January 23). How Much Worse Can It Get for Venezuela's State Oil Firm PDVSA? Council on Foreign Relations. Available at: <https://www.cfr.org/blog/how-much-worse-can-it-get-venezuelas-state-oil-firm-pdvsa>;

31. Jaffe, A. M. (2019, February 21). Amid Political Uncertainties, Venezuela's Oil Industry Situation Worsens. Council on Foreign Relations. Available at: <https://www.cfr.org/blog/amid-political-uncertainties-venezuelas-oil-industry-situation-worsens>;
32. Jones, B. (2007). Hugo! The Hugo Chavez Story from Mud Hut to Perpetual Revolution. Steerforth Press, Hanover: New Hampshire Jones;
33. Kaplan, S. B., Penfold, M. (2019). China-Venezuela Economic Relations: Hedging Venezuelan Bets with Chinese Characteristics. 6, Wilson Center, Washington D.C: United States;
34. Karl, T. L. (1997). The Paradox of Plenty: Oil Booms and Petro-States. Berkeley: University of California Press;
35. Kerr, J. (2006, January 3). Venezuela Enters New Year with New Oil Contracts. IHS Global Insight;
36. Koivumaeki, R. I. (2015). Evading the Constraints of Globalization: Oil and Gas Nationalization in Venezuela and Bolivia. Comparative Politics, 113, Vol.48, No.1, October;
37. Kott, A. (2012). Assessing Whether Oil Dependency in Venezuela Contributes to National Instability. Journal of Strategic Security, Vol. 5, No. 3, Fall;
38. Krauss, C. (2018, October 1). Venezuela's Crisis Imperils Citgo, Its American 'Cash Cow'. New York Times;
39. Labrador, R. C. (2019, February 5). Maduro's Allies: Who Backs the Venezuelan Regime? Council on Foreign Relations. Available at: <https://www.cfr.org/in-brief/maduros-allies-who-backs-venezuelan-regime>;
40. Lander, E. (2016). The implosion of Venezuela's rentier state. Transnational Institute New Politics Papers. Available at: <https://www.tni.org/en/publication/the-implosion-of-venezuelas-rentier-state>;
41. Lander, L., Lopez-Maya, M. (2002). Venezuela's Oil Reform and Chavismo. NACLA Report on the Americas, 36 (1): 21–23;
42. Lander, L. E. (2007). Venezuela's balancing act: Big oil, OPEC and national development. NACLA Report on the Americas, 25, Vol. 34, Issue. 4, (Jan/Feb): 25-30;
43. Lopez-Maya, M. (2014). The Political Crisis of Post-Chavismo. Social Justice, Vol. 40, No. 4 (134);
44. Losman, D. L. (2010). The Rentier State and National Oil Companies: An Economic and Political Perspective. Middle East Journal, Vol. 64, No. 3, Summer;
45. Luong. P. J., Weinthal, E. (2006). Rethinking the Resource Curse: Ownership Structure, Institutional Capacity, and Domestic Constraints. Annual Review of Political Science, Vol. 9;
46. Mahdavy, H. (1970). The Pattern and Problems of Economic Development in Rentier States: The Case of Iran, in Cook, M. A. (eds), Studies in the Economic History of the Middle East. Oxford University Press: Oxford, London;
47. Malleson, T. (2010). Cooperatives and the 'Bolivarian Revolution' in Venezuela. Affinities: A Journal of Radical Theory, Culture, and Action, 157, Volume 4, Number 1, Summer;
48. Manzano, O., Monaldi, F. (2010). The Political Economy of Oil Contract Renegotiation in Venezuela., in H. William, F. Sturzenegger (eds.) The Natural Resources Trap: Private Investment without Public Commitment. MIT Press: MA, Cambridge;
49. Mares, D. R., Altamarino, N. (2007). Venezeula's PDVSA and World Energy Markets: Corporate Strategies and Political Factors Determining Its Behavior and Influence. The James Baker III Institute for Public Policy, Rice University, March;
50. Mommer, B. (1990). Oil Rent and Rent Capitalism: The Example of Venezuela, Review. Fernand Braudel Center, Vol.13, No.4, Fall;
51. Monaldi, F., Hernandez, I., La Rosa, J. (2020). The Collapse of the Venezuelan Oil Industry: The Role of Above-Ground Risks Limiting FDI, Working Paper. 11, Center for Energy Studies, Rice University's Baker Institute for Public Policy;
52. Negroponte, D. V. (2018, June 19). Russian Interests in Venezuela: A New Cold War? American Quarterly;
53. Noreng, O. (1994). National Oil Companies and Their Government Owners: The Politics of Interaction and Control. The Journal of Energy and Development, 198, Spring, Vol. 19, No. 2;
54. Palacios, L., Monaldi F. (2022, March 23). Venezuela Oil Sanctions: Not an Easy Fix. Available at: <https://www.energypolicy.columbia.edu/research/commentary/venezuela-oil-sanctions-not-easy-fix#_edn6>;

55. Parraga, M., Spetalnick, M. (2022, June 6). U.S. to let Eni, Repsol ship Venezuela oil to Europe for debt. Reuters;
56. Parraga, M. (2013, September 4). Venezuela lacked good faith ConocoPhillips Seizure-World Bank. Reuters;
57. Parraga, M. (2021, October 28). Exclusive-U.S. Oil Refiner Citgo Petroleum Readies New Board Shakeup. Reuters;
58. Parraga, M. (2025, March 25). Oil loading slows at Venezuela's ports amid US tariffs, license termination, data shows. Reuters.
59. Plummer, R. (2013, March 5). Hugo Chavez leaves Venezuela in economic muddle. BBC News;
60. Pons, C. (2018, September 10). Exclusive: Venezuela signs oil deals similar to ones rolled back under Chavez – document. Reuters;
61. Ravell, A. F. (2011). A brief overview of Venezuela's Oil Policies. Available at: <https://www.lexology.com/library/detail.aspx?g=01cf61f2-9591-4ac3-9ceb-59ac37090e13>;
62. Rosales, A. (2016). Deepening Extractivism and Rentierism: China's Role in Venezuela's Bolivarian Developmental Model. 560, Canadian Journal of Development Studies, Vol. 37, Issue. 4, 560-7, December;
63. Rosales, A. (2018). Pursuing foreign investment for nationalist goals: Venezuela's hybrid resource nationalism. Business and Politics, 443, Vol. 20, Issue 3;
64. Ross, M. (2015). What Have We Learned about the Resource Curse? Annual Review of Political Science. 18: 239–259.
65. Sachs, J. D., Warner, A. (1999). The Big Rush, Natural Resource Booms and Growth. Journal of Development Economics, Vol. 59 (1, Jun).
66. Sachs, J. D., Warner, A. (1995). Natural Resource Abundance and Economic Growth. NBER Working Paper No. 5398. Available at: <https://www.nber.org/papers/w5398>.
67. SEC Filing. (2016). PDVSA: Petróleos de Venezuela, S.A. SEC, 128, Edgar Archives. Available at: <https://www.sec.gov/Archives/edgar/data/906424/000119312516712239/d171369dex99t3e.htm>;
68. Sigalos, M. (2019, February 7). China and Russia loaned billions to Venezuela — and then the presidency went up for grabs. CNBC;
69. Singh, J.M., Chen, G. C. (2018). State-owned enterprises and the political economy of state–state relations in the developing world. Third World Quarterly, 39:6, 1077-1097.
70. Smith, B., Waldner, D. (2021). Rethinking the Resource Curse. *Cambridge University Press: London, UK.*
71. Smith, M. (2013, January 11). Venezuela, Oil and Chavez: A Tangled Tale. Available at: <www.oilprice.com>;
72. Stein, P. (2009, November 16). Venezuela: The Background. APS Review of Oil Market Trends, Vol. 73, Issue 20;
73. Styhre, A. (2019). The institutional theory of the firm: Embedded Autonomy. Routledge: London, UK;
74. Strønen, I. Å. (2020). Venezuela's oil specter: Contextualizing and historicizing the Bolivarian attempt to sow the oil. History and Anthropology, 33(4), pp. 472–495. Available at: <https://doi.org/10.1080/02757206.2020.1762588>;
75. Suggett, J. (2010, August 4). Latest Venezuela-China Deals: Orinoco Agriculture, Civil Aviation, Steel, and $5 Billion Credit Line. Available at: <www.venezuelanalysis.com>;
76. Sullivan, M. P. (2009, July 28). Venezuela: Political Conditions and U.S. Policy. Congressional Research Service (CRS), 3-4, RL32488, Washington, DC;
77. The Independent. (2010, December 29). Carlos Andres Perez: President of Venezuela during the oil boom who was later forced out of office;
78. Tian, N., Lopes da Silva, D. (2019, April 2). The crucial role of the military in the Venezuelan crisis. Available at: <https://www.sipri.org/commentary/topical-backgrounder/2019/crucial-role-military-venezuelan-crisis>;
79. UN Comtrade, The Observatory of Economic Complexity. (2021, May 12). Venezuela: petroleum industry as share of exports 2010-2019. Statista – The Statistics Portal;

80. US Energy Information Administration. (2019, January 7). Background Reference: Venezuela. Available at: <https://www.eia.gov/international/content/analysis/countries_long/Venezuela/background.htm>;
81. US Energy Information Administration. (2020, November 30). Venezuela: Executive Summary-Analysis. Available at: <https://www.eia.gov/international/analysis/country/VEN>.
82. Venables, A. (2016). Using Natural Resources for Development: Why Has It Proven So Difficult? Journal of Economic Perspectives. 30 (1): 161–184;
83. Vizcaino, M. E., Yapur, N. (2022, March 8). Defaulted Venezuela Bonds Are Luring Buyers Betting on US Deal. Bloomberg;
84. Wilson, J. (2015). Understanding resource nationalism: economic dynamics and political institutions. Contemporary Politics, 2015, Vol. 21, No. 4, 399-416. 400-401;
85. Wiseman, C., Beland, D. (2010). The Politics of Institutional Change in Venezuela: Oil Policy During the Presidency of Hugo Chávez. Canadian Journal of Latin American and Caribbean Studies, Vol. 35, No. 70 (2010);
86. World Bank. (2017). The World Bank in Venezuela. Available at: <http://www.worldbank.org/en/country/venezuela/overview>;
87. World Bank. (2022, May 22). Oil Rents as % of GDP. The World Bank Data Catalog. Available at: <https://datacatalog.worldbank.org/country/benin?page=29>;
88. Yates, D. A. (1996). The Rentier State in Africa: Oil Rent Dependency and Neo-Colonialism In the Republic of Gabon. Africa World Press. Trenton: NJ.

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UKRAINE'S CHANCES OF VICTORY UNDER TRUMP'S PRESIDENCY

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Abstract. This article explores the potential consequences of Donald Trump's return to the presidency on the ongoing Russia-Ukraine war, with particular emphasis on the resulting geopolitical shifts and implications for global security. The analysis examines Trump's stated positions, proposed peace plans, and their reception in both Kyiv and Moscow, shedding light on how his rhetoric and strategy may reshape the trajectory of the conflict. It further contextualizes his approach within broader transatlantic dynamics, including NATO's cohesion, European defense initiatives, and the global response to a reoriented U.S. foreign policy. By highlighting Trump's preference for transactional diplomacy, skepticism toward multilateralism, and emphasis on bilateral negotiations, the article considers how these tendencies may accelerate a reordering of the international system and challenge the existing liberal order. The discussion also assesses the potential ramifications for U.S. alliances and regional stability in Eastern Europe. The article concludes that while Trump's promises of a swift peace may have rhetorical appeal, their implementation could intensify volatility and long-term insecurity in the region and beyond.

KEYWORDS: PEACE NEGOTIATIONS, NATO AND EUROPEAN SECURITY, RUSSIA–UKRAINE WAR

INTRODUCTION

In 2022, the war launched by Russia in Ukraine changed the geopolitical situation in the world. It is the largest and most multidimensional conflict since the end of the Cold War, which has put an end to the existing rules-based international system and laid the foundation for a new world order. Given the multidimensional nature of the conflict, it involves all representatives of the civilized world, and its consequences directly or indirectly affect other states.

Two years after Russia's full-scale invasion, Ukraine has regained approximately 54 percent of the occupied territory, while Russia still holds onto 18 percent of the country's sovereign ter-

ritory.[1] Meanwhile, Russia continues to bomb Ukrainian cities and blockades its Black Sea ports, while Ukraine has stepped up air strikes on Russian ships and infrastructure, including deep in the Russian territory.

Since January 2022, Ukraine has received about $300 billion in aid, but recently, there has been a growing pessimism on the part of its supporting countries and a need for policy review, most clearly demonstrated by the election in the United States, where Republican Donald Trump returned to power. Trump's main message to the world was that he would end the war in Ukraine.[2] However, the ongoing processes and the unpredictable foreign policy of the United States leave question marks, based on which it has become very difficult for politicians or experts to predict the course of events. At times, Trump's statements do not coincide with each other, but his message is clear that he wants to end this war, which he reiterated during a meeting with the new German Chancellor Friedrich Merz in June 2025.

In one of his comments, Trump argued: "Sometimes you see two little kids fighting like crazy. They hate each other, and they're fighting in the square, and you're trying to help them. Sometimes, they don't want to be helped; sometimes it's better to stop and let them fight for a while and then help them. I told Putin on the phone, President, you might have to continue the war and a lot of suffering, because both sides are suffering before you help them, before you can help them. In some form, there will be additional fighting. He hit them, and they hit them very hard, deep into Russia. Putin made it very clear to me so we have no choice but to hit them, and it probably won't be pretty. I told him I don't like this. I said, 'Don't do this. You should not do this. You have to stop this'. But again, there is a lot of hatred between Russia and Ukraine. I stopped the war between India and Pakistan, and I want to do the same with Russia and Ukraine. At some point, it will happen. I believe in it. If it doesn't happen, or if I see someone deviate from this path, if Russia deviates, you'll be surprised how tough we will be".[3]

1. RUSSIA-UKRAINE WAR AND TRUMP'S POLICY

Trump laments the devastation of Ukrainian cities and the deaths on both sides, insisting that the real toll will ultimately be much higher than Kyiv and Moscow have so far claimed. "They're killing everyone, it's the worst massacre this world has seen since World War II. It has to stop", he said, adding that his administration would speak to both Russian President Vladimir Putin and Ukrainian President Volodymyr Zelensky.[4]

Trump's team is working on a plan to bring Ukraine and Russia to the negotiating table, and their statements indicate that both Kyiv and Moscow will have to make compromises, although the Ukrainian president has repeatedly stated that the war cannot end at the expense of Ukraine's sovereignty and territory, and the only way to end it fairly is to increase pressure on Russia and increase aid to Ukraine, which is unlikely to happen under Trump's presidency.[5]

During the Russian-Ukrainian talks in Turkey, there was a feeling that the war might be coming to an end, or that a temporary ceasefire might be agreed upon, but the real outcome of the talks was only a prisoner exchange. At the same time, Trump believes that Ukraine and Russia are like two children who should be allowed to fight until they choose to behave otherwise. "Sometimes you see two little kids fighting like crazy, sometimes they don't want to be helped, and sometimes it's better to stop and let them fight for a while and then help them" – Trump said.[6]

Donald Trump has been paying closer attention to ending the war in Ukraine since being elected the 47th president of the United States. Based on comments made during his first term, Trump's thinking remains highly transactional on foreign policy in general and the Russia-Ukraine conflict in particular:

He promised to end the war quickly, within months of his presidency. Trump's operating mode has been to deal with the other "most powerful"

1 Center for Preventive Action. (2024). War in Ukraine.
2 Slattery, G., Landay, J. (2024). Trump's plan for Ukraine comes into focus: NATO off the table and concessions on territory.
3 FrontNews. (2025). Trump, I am with Ukraine, I am for stopping the killings, this is what I really want.
4 Politico. (2024). Trump sees 'a little progress' toward ending war in Ukraine.
5 FrontNews. (2024). Zelenskyy: Ukraine must secure peace without trading territory or sovereignty.
6 FrontNews. (2025). Trump, I am with Ukraine, I am for stopping the killings, this is what I really want.

people in the room and often to ignore other stakeholders. Trump's operational approach has always been to deal with the other "most powerful" people in the room and often to ignore other stakeholders.[7]

This means that any peace talks are likely to be bilateral between Trump and Vladimir Putin, the dynamic which Putin seems to have supported. While Trump's meetings with Zelensky in New York and Paris may have signaled the possibility of revealing his thoughts, Trump may simply be positioning himself for the talks, but these expectations dramatically changed by the time of the talks between the Ukrainian and Russian delegations in Istanbul.

Trump's statements suggest that he plans to end the war with the status quo, with Russia retaining control of the occupied territories. By cutting off U.S. military and financial aid to Ukraine, by rejecting Kyiv's membership in NATO, and by recognizing Russian sovereignty over the occupied territories of Ukraine. Trump can project his power both at home and abroad.

Trump's statements also focus on the scenario of a breakdown in peace talks: Trump could step up arms and financial aid to Ukraine. The Biden administration gave Ukraine the opportunity to use its weapons to attack Russian territory, which in turn increases the risks of escalating the conflict as Putin escalates with tactical nuclear weapons.

Trump could pressure allies in this scenario to ease the Western sanctions regime against Russia and its oligarchs. This would not only directly help Russia but would also hinder Ukraine's war effort, as billions of dollars in interest from frozen Russian central bank assets are currently being funneled to Kyiv to finance reconstruction and rearmament.

Donald Trump will focus on achieving peace in Ukraine rather than returning occupied territories, saying Ukraine's focus should be on peace, not territory.[8] Brian Lanza, who worked on Trump's 2024 presidential campaign, said the administration would push for Zelensky to consider a "realistic vision of peace".

Given the current scenario, following Donald Trump's victory in the presidential election, there was concern that Ukraine could lose the continued support of its most important ally, the United States, which has spent $108 billion in military, humanitarian, and economic aid since Russia's February 2022 invasion.

"We are preparing for the worst-case scenario, when [Trump] stops all aid", said Lieutenant General Ihor Romanenko, a former deputy chief of the General Staff of the Ukrainian Armed Forces.[9] Trump has promised to end the Russia-Ukraine war "within 24 hours", but has provided little explanation for the plan, saying he would cut off military aid to Kyiv unless it begins peace talks with Moscow.

Trump's "peace plan" remains vague, but experts say it likely involves giving up some or all of the territory occupied by Russia, nearly 19 percent of Ukraine's territory, in exchange for a peace deal or a freeze along the present front-line positions. They were made more stringent by Russia at the second round of talks in Istanbul.

Trump, who often describes himself as a masterful deal-maker, has also argued that if Moscow does not engage in peace talks, he will push ahead with the supply of advanced weapons to Kyiv. This approach implies a more forceful and hardline approach to international security issues and is focused on achieving concrete results with whatever means available. Trump's promise that the war will end is inevitable, because he might be thinking of two scenarios: a. forcing the conflict to freeze under the current status quo, which includes cutting off financial and military aid to Ukraine, or b., strengthening Ukraine militarily. In either case, the war will end, and the foundation for a new geopolitical order will be laid. However, the new German Chancellor has taken the initiative and lifted restrictions on Ukraine's use of long-range missiles, and he will also transfer Taurus missiles to Ukraine.

Earlier, one of President-elect Donald Trump's first congratulatory phone calls was to Ukrainian President Volodymyr Zelensky on the day after the election. Both sides noted that the conversation

7 Kelly, M.J., Martin, C. (2024). Trump's Endgame for the War in Ukraine.

8 Santos, S.F. (2024). Trump ally says Ukraine focus must be peace, not territory, BBC News.

9 Al Jazerra. (2024). Russian-Ukrainian War. (2024). 'Worst-case scenario': Ukraine awaits Trump's presidency with trepidation.

was positive and focused on future peace. It was not until the following day that Trump spoke to Russian President Vladimir Putin, and even then, the Kremlin denied the dialogue had gone as smoothly as the Russian leader had hoped. The Washington Post, which first reported the call, citing five sources familiar with the matter, said that Trump "urged the Russian president not to start a war in Ukraine and reminded him of Washington's significant military presence in Europe". This is certainly not a message Putin would welcome.

Trump and Vice President J.D. Vance's talk of a quick peace deal poses a major challenge for Ukraine. The Trump administration's new peace plan would force both sides to compromise in order to avoid further war and destruction. However, recent actions and the dynamics of the war make it clear that the war is still going to continue. Trump's future priorities and the current state of geopolitical dynamics could lead to a peace deal that still gives Ukraine positive leverage.

Although NATO has been promoting Ukraine's membership prospects since 2008, it has repeatedly put the process on hold, but Ukraine's size and its experience in hot war for more than a decade, not to mention the contribution of Ukrainian troops in the past, could be a valuable argument in its favor but Vladimir Putin emphasizes and the peace agreement memorandum he presented strictly defines Ukraine's military neutrality and the inadmissibility of such forces.[10] This could be a particularly important element as Trump renews pressure on European allies in NATO to increase their defense spending and rely less on the United States. Fears of Trump's waning support for the alliance itself also provide a backdrop for supporting Ukraine. In response to recent developments, NATO has begun rearmament and related exercises. European states are increasing their military industries, and much of their armaments remain strictly classified. Eastern European states, which face a direct military threat in the face of increased possible intervention, are especially preparing.

In addition to the recent developments around the military issue, a particularly heated confrontation has begun between Trump and Elon Musk, which was fueled by Elon Musk's resignation from his position and Trump's criticism of him. Trump accuses Elon of using psychotropic drugs, which, in his opinion, was the basis for aggression. Elon Musk, on the other hand, has recently accused Trump of being in Epstein's files.

The fierce public dispute between US President Donald Trump and his billionaire supporter, Elon Musk, intensified after Musk publicly accused Trump of mentioning his name in government files related to the crimes of financier Jeffrey Epstein. The Trump administration has admitted that it is reviewing tens of thousands of documents, videos, and investigative materials that its MAGA movement says will expose public figures complicit in Epstein's crimes.[11]

2. GEOPOLITICAL RAMIFICATIONS AND THE NEW GLOBAL ORDER

Trump's return to the presidency significantly affects not only the course of the Russia-Ukraine war but the structure of the global order itself. His transactional diplomacy, characterized by prioritizing bilateral deals with strongmen over multilateral alliances, signals a retreat from the established international norms shaped by post–World War II institutions such as NATO and the UN.

Under Trump's leadership, key European countries—especially Germany under Chancellor Friedrich Merz—have moved toward strategic autonomy by increasing defense budgets and expanding military-industrial capabilities. Eastern European states, facing direct military threats, are particularly accelerating rearmament to hedge against potential weakening of U.S. guarantees. In parallel, global actors like China, Iran, and North Korea perceive opportunities in a more isolationist U.S. stance. Trump's inconsistent signals toward allies like South Korea and Japan have prompted debates about nuclear deterrence and indigenous defense capabilities. Meanwhile, in the Middle East, the recalibration of power dynamics is evident in Gulf states balancing relations between Washington, Moscow, and Beijing.

The weakening of a rules-based international

10 Gienger, V. (2024). To 'End' War in Ukraine, Trump Might Be Tougher on Putin Than Critics Think. Just Security.

11 France24. (2025). Musk accuses Trump of being named in Epstein files as public row worsens.

order is a direct consequence of normalizing territorial acquisition through force. Trump's openness to recognizing Russia's control over Ukrainian territories risks setting a dangerous precedent, potentially encouraging other authoritarian regimes to pursue expansionist agendas. Thus, Trump's Ukraine policy has repercussions far beyond the immediate region. It accelerates a transition toward a multipolar world where power politics prevail over democratic values and international law, fundamentally challenging the liberal world order[12].

CONCLUSION

Since 2022, the war has only escalated with devastating consequences not only in terms of human lives and infrastructure, but also the erosion of the rules-based international system. Each step taken towards peace talks escalates the situation, as Russia's real goals in this war are gradually expanding. Despite Trump's attempts to end the conflict in a short time, he has failed to change the situation, which means that the war continues. European security is also clearly at the center of the negotiations, where Germany, with its new Chancellor supporting Ukraine and expressing its readiness to create the most powerful army in Europe. Leaders around the world, be it in the Middle East, Asia-Pacific countries, and beyond, are watching the results and signs of the US position to determine their future.

Trump's diplomacy to end the war and lay the foundation for a lasting peace creates a positive outlook, although given the recent developments, it is still questionable. Trump's policy is result-oriented and assumes a compromise between both sides, since the escalation of this conflict was largely determined by decisions that took into account the interests of both sides and a process that took place over time. According to Trump, there is no alternative to peace, which is an important statement against the backdrop of increased threats and destabilization in the world.

Thus, it is impossible to predict the end of the brutal war waged by Russia against Ukraine. One outcome is clear, though: the collapse of the international system, the arms race, and militarization pose a threat to peace and global stability in the long term.

12 Avdaliani, E. (2022). New World Order and Small Regions. The Case of South Caucasus. Palgrave Macmillan, pp. 17-72.

BIBLIOGRAPHY:

1. Al Jazerra. (2024). Russian-Ukrainian War. (2024). 'Worst-case scenario': Ukraine awaits Trump's presidency with trepidation. Available at: <https://www.aljazeera.com/news/2024/11/26/worst-case-scenario-ukraine-awaits-trumps-presidency-with-trepidation>;
2. Avdaliani, E. (2022). New World Order and Small Regions. The Case of South Caucasus. Palgrave Macmillan.
3. Center for Preventive Action. (2024). War in Ukraine. Available at: <https://www.cfr.org/global-conflict-tracker/conflict/conflict-ukraine>;
4. France24. (2025). Musk accuses Trump of being named in Epstein files as public row worsens. Available at: <https://www.france24.com/en/americas/20250606-musk-accuses-trump-of-being-named-in-epstein-files-as-public-row-worsens>.
5. FrontNews. (2024). Zelenskyy: Ukraine must secure peace without trading territory or sovereignty. Available at: <https://frontnews.ge/en/zelenskyy-ukraine-must-secure-peace-without-trading-territory-or-sovereignty/>;
6. FrontNews. (2025). Trump, I am with Ukraine, I am for stopping the killings, this is what I really want. Available at: <https://frontnews.ge/ge/news/me-ukrainastan-var-trampma-shemdgomi-mkhardacheris-shesakheb-gantskhadeba-gaaketa>;
7. Gienger, V. (2024). To 'End' War in Ukraine, Trump Might Be Tougher on Putin Than Critics Think. Just Security. Available at: <https://www.justsecurity.org/105019/trump-ukraine-policy-peace-talks/>;

8. Kelly, M.J., Martin, C. (2024). Trump's Endgame for the War in Ukraine. Available at: <https://www.justsecurity.org/105451/trumps-endgame-ukraine-war/>;
9. Politico. (2024). Trump sees 'a little progress' toward ending war in Ukraine.Available at: <https://www.politico.eu/article/donald-trump-war-in-ukraine-russia/>;
10. Santos, S.F. (2024). Trump ally says Ukraine focus must be peace, not territory, BBC News. Available at: <https://www.bbc.com/news/articles/czxrwr078v7o>;
11. Slattery, G., Landay, J. (2024). Trump's plan for Ukraine comes into focus: NATO off the table and concessions on territory. Available at: <https://www.reuters.com/world/trumps-plan-ukraine-comes-into-focus-territorial-concessions-nato-off-table-2024-12-04/>.

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GEORGIA'S INTEGRATION INTO THE EUROPEAN UNION: A SYNERGY OF MUTUAL INTERESTS

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Abstract. The aim of this article is to demonstrate the mutual interest of both parties in working together today, with a view to Georgia's full integration into the European Union. This objective is rooted in a long-standing relationship that has progressively deepened over the years, driven by shared values and a common aspiration for peace and stability in the region. To this end, we propose to examine the various points of convergence, from both a Georgian and a European perspective. These include political alignment, economic cooperation, security collaboration, and cultural exchange. Georgia has made significant efforts to align its institutions and policies with European standards, while the European Union has expressed consistent support for Georgia's sovereignty and territorial integrity. By exploring these elements, this article seeks to highlight not only the benefits of stronger cooperation but also the strategic importance of Georgia's full accession for the development of the European Union itself.

KEYWORDS: GEORGIA, EUROPEAN UNION, INTEGRATION, MUTUAL INTERESTS.

INTRODUCTION

Some European countries are not part of the Union for various reasons (neutrality in Switzerland, fiscal freedom in Andorra, etc.), while others are applying to join. Georgia is one of these new countries eager to join the European Union, a desire marked by the Georgian population itself (82%[1]), and by the decision of the Union's institutions to recognize the validity of Georgia's application for enlargement on December 14, 2023.

Founded after the Second World War to promote peace, prosperity, and solidarity between its member states, the European Union today is much more than just the economic and customs union it was at its inception. Today, it occupies a central position in the world's political, economic, social, cultural, diplomatic, and strategic landscape. What's more, it embodies an ambitious project to support and encourage democratic values, human rights, and cooperation on an international scale.

1 National Democratic Institute. (2023, May). Taking Georgians' pulse: Findings from March 2023 telephone survey (Conducted by CRRC Georgia, p. 50).

In the current and prospective context, the European Union is facing a series of complex and interconnected challenges: the scale and recurrence of international economic and financial crises; the sometimes uncontrolled migration at its borders; the renewal of security policies against cybercrime and terrorism; the return of symmetrical conflicts in Europe (war in Ukraine); the erratic international policy of Donal Trump; the necessary revolution in the face of threats to climate and biodiversity.

To achieve this, the Union is implementing institutional and pragmatic internal measures, and participating in international cooperation, but it must also rethink its global influence: the United States is no longer Europe's unconditional ally, and the rise of new players (China, India, Russia...) demonstrates the need to re-examine its place and role on the world stage. Does Europe want to close itself off like a besieged fortress, to deny itself by returning to a selfish, individualistic Europe of Nations, or to continue to expand with new members bringing new opportunities?

To meet this challenge, on June 14, 2022, in Brussels, the European Council held a strategic debate on the European Union's relations with its partners in Europe, focusing on the proposal to launch a "European political community". The aim is to provide a platform for political coordination for European countries across the continent, with this platform potentially involving all European countries with which the Union maintains close relations.

The aim would be to foster political dialogue and cooperation to address issues of common interest, to strengthen the security, stability, and prosperity of the European continent.

In its conclusions (June 23-24, 2022), "The European Council recognizes the European perspective of Ukraine, the Republic of Moldova and Georgia. The future of these countries and their citizens lies within the European Union".[2]

The European Council was thus ready to grant candidate country status to Georgia once the priorities set out in the Commission's opinion on Georgia's application for membership had been taken into account. This will be done in December 2023, with Georgia officially acceding to candidate country status.

What benefits can the European Union expect to derive from the future integration of these new countries, specifically Georgia, which is not directly attached to the geographical territory of existing Europe? The analysis must be carried out at several levels, each of which corresponds to specific and plural expected benefits.

1. POLITICAL, INSTITUTIONAL, AND SECURITY LEVEL

A – Expanding the European Union's Sphere of Influence

Generally speaking, the addition of new members can only widen the EU's geopolitical scope and strengthen its role as an international player, giving it a stronger voice in world affairs. Enlargement is therefore one of the major strategic elements of the European Union's foreign and neighborhood policy.

From a practical point of view, the example of Croatia's accession in 2013 is a perfect illustration of how the integration of new members enables the EU to strengthen its regional influence and promote stability. Indeed, Croatia's accession has enabled the EU both to strengthen its influence in the Western Balkans and to help stabilize the region.[3] Indeed, the Western Balkans is a historically fragile region, marked by ethnic and political conflict, and as such, represents a strategic area for the EU. Croatia's accession symbolized the EU's strong commitment to the stabilization and integration of this region. By becoming a member of the EU, Croatia has also served as a model for the other countries of the Western Balkans, demonstrating two important points: firstly, that economic, political and social reforms can lead to full membership, and secondly, that Croatia's accession has strengthened the EU's credibility as an actor capable of promoting democratic and eco-

2 Consilium. (2022). Conclusions of the European Council, 23-24 June 2022. Available at: <https://www.consilium.europa.eu/media/57452/2022-06-2324-euco-conclusions-fr.pdf>;

3 European Monitor (2013, Friday 28). Croatia's accession to the European Union – Q&A – Main contents. Available at: <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vjavfyp3hcy0>.

nomic reforms. The countries of the region, such as Serbia, Montenegro, Albania, Northern Macedonia, and Bosnia-Herzegovina, see the EU, through this example, as a key partner for their development and stability. The EU's commitment through enlargement also encourages these countries to adopt European standards of governance, human rights, and the rule of law, and thus demonstrates the Union's ability to promote its "soft power" values internationally.

Expanding the EU's area of influence by integrating Georgia, in a fragile and dangerous geopolitical and strategic context, is therefore in line with strategic geopolitics: Georgia, situated at the crossroads of Eastern Europe and Asia, occupies a strategic geographical position of particular importance to the European Union. By considering Georgia's integration, the EU could considerably extend its area of influence in the South Caucasus, a region marked by geopolitical tensions and the competing ambitions of powers such as Russia and Turkey.

Georgia's geographical and geopolitical location would be of great benefit to Europe: among other things, it would position Georgia directly on the northern border of Turkey and Armenia (another candidate for EU membership), and the northeastern border of Azerbaijan and the southern border of Russia. The European Union's area of influence would thus be multiplied by Georgia's accession to the Union alone.

B – Promoting Peace, Security, and Long-term Stability

By encouraging cooperation and economic, political, and social integration, EU enlargement can help to promote long-term peace and stability throughout the European region and on the southern border of the Caucasus. Thus, by integrating Georgia, the EU can only strengthen its ability to shape regional orders and to guarantee the collective security of its space and the new integrated territory. Indeed, this enlargement process is not only beneficial for the new member but also for the Union as a whole, by strengthening its geopolitical position and ensuring the harmonious and stable development of its neighborhood.

Here, too, the Croatian example is conclusive: stabilization of the Western Balkans is crucial to the security of Europe as a whole. Croatia's integration has reduced the risk of conflict in the region by anchoring the country in European structures of security and cooperation. It has also sent out a strong signal against the influence of outside players such as Russia and China, who are seeking to extend their influence in Eastern Europe and the Balkans in particular. Croatia's accession has also encouraged greater regional cooperation. By becoming a member of the EU, Croatia has actively participated in regional cooperation initiatives, helping to resolve bilateral disputes and promote reconciliation in the Western Balkans. This has helped to create a more stable and cooperative environment in the region.

Georgia's integration into the EU would therefore help stabilize a region often shaken by conflict. Georgia's proximity to trouble spots such as Abkhazia and South Ossetia, and its recent history of war with Russia in 2008, make the promotion of peace and security crucial. By integrating Georgia, the EU could play a more active role in resolving regional conflicts and promoting reconciliation, or at least stabilizing a highly critical geopolitical situation. Indeed, Georgia's integration into the EU would drastically weaken Russian influence in the South Caucasus, as Russia wields considerable influence in the region and takes a dim view of its Georgian and Armenian neighbors' attempts at European and Atlantic integration. By offering Georgia a path to membership, the EU could reduce Georgia's dependence on Russia, strengthen the country's sovereignty and independence, and represent a major step in expanding the Union's sphere of influence. The EU would thus strengthen its ability to shape the regional order in the South Caucasus, promote stability and security, disseminate its values, and reduce the influence of external actors.

A number of concrete examples demonstrate that enhanced cooperation between EU member states in the field of defense and security has made it possible not only to combat direct and indirect military threats (cyber threats) more effectively, but also to coordinate responses to international crises.[4] Similarly, several studies have

4 Consilium. (n.d.-a). Defence and security policy.

shown that EU enlargement has had a positive effect on peace and stability in the candidate countries, and even more so in the integrated countries.[5]

In this respect, the Ukrainian example is also quite conclusive: any country bordering a power aiming at expansionism (conquest of territory, human colonization), in this case, Vladimir Putin's Russia, can suddenly be invaded under the pretext of ethnic regrouping or reconstitution of a "historically" homogeneous territorial unit. Georgia underwent this expansionist policy in 2008, Crimea in 2014, and the eastern part of Ukraine in 2022. Yet, Putin is not attacking any of the NATO and/or EU member states on which he might also have conquering designs: Poland and the three Baltic states of Estonia, Latvia, and Lithuania. European membership and the common military defense shield of NATO member countries are sufficient deterrents to prevent any direct military aggression. Finland, for example, after decades of neutrality, urgently joined the Defense Organization on April 4, 2023, protecting itself from any expansionist vision on the part of its Russian neighbor. The integration of new members into the EU is therefore undeniably an essential factor in maintaining security and stability, both for these territories and for the Union as a whole.

2. IDENTITY AND CULTURE
A – Strengthening the Cohesion of the European Identity

Europe is made up of 27 heterogeneous states (level of economic and social development, specific cultures and languages, etc.). It is this diversity that makes it so rich. Any additional contribution based on "present consent, the desire to live together, and the will to continue to make the most of the heritage we have received" (Ernest Renan), underpins the ideal of a "European nation".

It's not a question of creating a "United States of Europe". The United States is a country populated by conquered natives, successive waves of migrants, and descendants of slaves, who ended up creating a "melting pot" of diverse populations, mostly from outside the territory, creating a sovereign and unified state. Europe, on the other hand, is made up of locally existing nations, of countries built up throughout history, which continue to exist in the community formed by the European Union. Far from denying linguistic and cultural differences, Europe claims to be a juxtaposition of autonomous entities, freely linked by a new common destiny, enjoying the richness of its differences. There is no desire to create a "European" in the sense of an "American", there is no attempt to acculturate or dominate one culture over another, but on the contrary, a desire to build a common project on these specificities and disparities.

In this way, each new arrival enriches the diversity of the European Community, and helps to continue building a European "identity", this richness being the very foundation of its existence: "strengthening the European identity is a necessity for the future of Europe".[6]

But how can we define Europe in terms of identity, to promote common European values? In other words, which countries not yet integrated into the Union can be "naturally" defined as "European", and therefore "legitimately" accessible to full integration? A single criterion is not enough. For example, if we take only the geographical aspect into account, it may seem incongruous to refuse Turkey's application but to integrate Georgia and Armenia, which are located further to the east. History would lead us to consider territories long conquered and dominated by European empires (the Maghreb, for example), and the linguistic aspect alone to consider access to Europe for French-speaking, English-speaking, or other peoples. Religion is an aspect often evoked, through the fantasy of a "Christian" Europe, which does not stand up to the undeniable presence of other religions on the continent, and to the dominant secularism in the powers and cultural life of many contemporary European countries. A multiplicity of objective and subjective criteria must be taken into account: to the north and west, the Atlantic Ocean marks a geographical boundary; to the

Available at: <https://www.consilium.europa.eu/en/policies/defence-security/>.

5 Consilium. (n.d.-a). Defence and security policy. Available at: <https://www.consilium.europa.eu/en/policies/defence-security/>.

6 Cairn.info. (2004). L'Europe et ses frontières. Études, (6), 729. Available at: <https://www.cairn.info/revue-etudes-2004-6-page-729.htm>.

south and towards Turkey, history, religion, and customs form a second frontier. To the east, another criterion needs to be added: if history, religion and customs are shared (as in the case of Russia), the Union can only admit states that have voluntarily decided to claim, assume and apply the political and institutional consequences of their membership of the common project that is the European Union.

The enlargement of the EU to include Georgia meets all the criteria mentioned here: the country's history is European, its religion has been dominant in Europe for two millennia, its culture is in no way oriental or Asian, and its desire to anchor itself institutionally in Europe is strong. Moreover, Georgia's accession would reinforce the spread of European values of democracy, the rule of law, and respect for human rights in the South Caucasus and motivate Georgia to pursue and intensify its political and economic reforms, aligning its standards and practices with those of the EU.[7] Finally, membership would serve as an example to other countries in the region, encouraging similar developments.

There is also a kind of "moral duty" Europeans owe to Georgia: it was one of the first countries to disengage from Russia after the collapse of the USSR. In 2004, Eduard Shevardnadze was overthrown by the "Rose Revolution", ushering in a pro-European and reformist government. In 2008, former president Mikheïl Saakachvilli applied (along with Ukraine) for NATO membership. It was supported by George W. Bush, but rejected by Nicolas Sarkozy and Angela Merkel to avoid offending Putin's Russia... Two months later, in August 2008, Russia attacked the capital Tbilisi and moved into the breakaway republics of Abkhazia and South Ossetia. NATO membership would have prevented this, as would EU membership today. Finally, as we have already mentioned, Putin is not currently attacking any NATO and/or EU member country: the moral duty of Europeans is therefore matched by the geostrategic necessity of containing Russian influence.

B – Boosting Tourism and Cultural Wealth

Tourism is a crucial sector for the European economy, making a very significant contribution to the GDP of EU member countries: in 2019, tourism accounted for around 10% of EU GDP and generated over 27 million jobs, or almost 12% of total employment in the EU.

The addition of Georgia to the EU can only stimulate intra-European tourism, encouraging citizens of the current Union to discover new places, traditions, and cultures.

Indeed, Georgia, with its rich history, unique culture, diverse landscapes, and natural heritage, would add a new dimension to the EU's tourism offering, attracting tourists interested in lesser-known, more "authentic" and original destinations. In 2019*, Georgia welcomed over 9.3 million international visitors, so it's a safe bet that the country's accession would lead to a sharp rise in tourism on its soil. There are many compelling examples:

Hungary and Poland joined the European Union in 2004. On average, these two countries received 9.6 and 14.3 million travelers a year, respectively, before their accession. By 2019, these figures will have risen to 16.5 and 21.4 million tourists, an increase of over 70% for Hungary and around 50% for Poland. The growth of the sector, thanks to accession, is therefore quite significant.

The same applies to Bulgaria (5.2 million tourists in 2007, versus 12 million in 2019, an increase of 130%), Romania (1.9 versus 2.7 million, a 42% increase in inflows), and Croatia (12.4 million in 2013, when it joined the EU, 19.5 million in 2019, an increase of 57% in just six years).[8]

These figures show that EU membership has had a positive impact on tourism in member countries, particularly in terms of increasing the number of foreign visitors. This is due to a number of factors, including easier travel, greater political and economic stability, better integration into European transport networks, and greater visibility of destinations for foreign tourists. But

7 EEAS (07.09.2023. The EU and Georgia. Available at: <https://www.eeas.europa.eu/georgia/european-union-and-georgia_en?utm_source=chatgpt.com>.

8 *We have deliberately chosen this reference date, so as not to take into account the effects of the Covid 19 pandemic from 2020 onwards.
Eurostat. (n.d.). Tourism statistics. Available at: <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tourism_statistics>.

it's undeniable that the effects are also positive for the European Union as a whole, as these tourism-receiving countries contribute to the Union's budget, and encourage their citizens to travel to the rest of Europe too. It also harmonizes quality standards and regulations in the tourism sector, enhancing the tourist experience and boosting confidence: according to a study by the European Commission, some 80% of tourists say they are satisfied with tourist services in the EU, thanks to perceived quality and safety.

Georgia's accession to the EU would attract structural and investment funds to develop tourism infrastructures, thus improving the accessibility and quality of the country's tourism services. At the same time, tourism partnerships based on policies of regional cooperation and joint initiatives would be strengthened**:** Georgia's accession would enable enhanced cooperation with other EU member countries on shared tourism initiatives, such as cultural itineraries and joint tourism promotion projects.

The tourism sector can rely on the promotion of the country's rich culture and heritage. Georgia is known for its UNESCO World Heritage sites[9], its ancient wine-making traditions, its unique and varied cuisine, its charming capital city steeped in history, and its remarkable natural sites.

Georgia also has a rich and diverse history and culture, with a long-standing and vibrant artistic, musical, and literary tradition. Its integration into the EU would thus enrich the Union's cultural diversity, bringing new perspectives, traditions, and forms of artistic expression. In the form of a shared cultural heritage, its integration into the EU could both contribute to the preservation and promotion of this common cultural heritage and strengthen the sense of belonging to a diverse and multiple European community. Similarly, the country's integration would facilitate cultural and artistic exchanges between Georgia and the other member states of the European Union. This could take the form of artistic collaborations, cross-cultural festivals, exhibitions, and other events, all promoting mutual understanding and the enrichment of citizens.

Beyond tourism and cultural exchanges, education and research would also benefit from this full integration, in at least three respects: firstly, the promotion and development of multilingualism, with the Georgian language joining European language programs, enriching the language skills of EU citizens. In addition, the development of educational and cultural resources, both in Georgian and in European languages, will facilitate mutual language learning throughout the Union. The second advantage would be the extension of educational exchange programs, such as Erasmus+, to Georgian students and researchers, enriching academic and cultural prospects within the EU. Last but not least, integration would enable the amplification of research between scientists, humanities specialists, academics, and private players. The writing of this article is a prime example of this.

These combined advantages could make the Union an even more attractive, enriching and competitive tourist, cultural, scientific and intellectual destination on the world stage, strengthening the European Union's global appeal.

3. ECONOMIC AND STRATEGIC LEVEL

A – Economic Benefits from Expansion of the Single Market

The accession of new countries increases the size of the EU single market, opening up new opportunities for trade, investment, and growth, both for the newcomer and for existing member countries.

So, for example, if we take the case of Croatia seen above, EU enlargement has opened up new economic opportunities for both sides. Croatia has benefited from European investment (7.7 billion euros in FDI (Foreign Direct Investments) between 2013 and 2019), structural and cohesion funds (12.7 billion euros since 2013), which have stimulated its economic development (gain of over 7 billion euros in GDP).

In return, European companies have gained greater access to the Croatian market, boosting trade and investment in the region: integration has added some 4.2 million consumers to the single European market, significantly increasing the

9 UNESCO. (n.d.-a). Georgia – UNESCO World Heritage Centre. Available at: <https://whc.unesco.org/en/statesparties/ge>.

volume of intra-EU trade. The integration of 10 new countries in 2004 (including Poland, Hungary, and the Czech Republic) led to a significant increase in intra-EU trade: between 2003 and 2008, exports from the old member states to the new ones almost doubled, from 134 billion euros to 247 billion euros.

Similarly, in macroeconomic terms, the accession of new members, even if they are less wealthy and less developed, is a source of growth for the Union as a whole: +2.8% growth in European GDP following the entry of Croatia, +4% following the accession of Bulgaria and Romania in 2007.[10]

In addition to these quantitative data, there are also positive qualitative elements: the integration of new countries stimulates competition and innovation, which in turn strengthens the overall competitiveness of the EU and the new countries on the world stage.[11] Micro-economically, too, the positive data are undeniable: the integration of new members promotes job creation throughout the EU. For example, the 2004 enlargement contributed to the creation of 1.5 million jobs in the new member states between 2004 and 2007. What's more, in a report by the European Commission,[12] detailing the economic impact and benefits of EU enlargement in terms of jobs and economic growth, totaling the jobs created directly in the member states and the additional jobs indirectly created in the old new member states, it is estimated that EU enlargement since 2004 has contributed to the creation of around 4 million jobs across the EU as a whole up to 2019.

EU enlargement also brings economies of scale, particularly in manufacturing and services. EU companies can benefit from lower production costs and a larger market for their products and services. The French example of the "Dacia" car brand is a case in point: this brand could not have been created in France, as production costs and taxes made it impossible to produce a low-cost, high-quality vehicle. By locating its activities in Romania, the French group directly employs 14,000 people, accounts for 14% of manufacturing jobs in the country, and contributes 3% to the national GDP. In France, Dacia's activities employ thousands of people (dealers, distribution network, indirect jobs) and account for 7.6% of the French automotive market. Both countries benefit from a Win-Win situation.

Finally, in the specific case of Georgia, the European Union would also benefit from an unprecedented advantage, due to the country's geographical position: a further consolidation of its strategic position in a region where it has little presence. Indeed, by integrating Georgia, the EU could also improve regional connectivity, facilitating links between Europe and Central Asia. Georgia, with its Black Sea ports and transport corridors linking Europe and Asia, would play a key role in regional connectivity initiatives such as the New Silk Roads. This would greatly strengthen the EU's strategic position in international trade networks.

B – A Strategic Market for the European Union

For the European Union, Georgia offers a number of strategic (economic) advantages,[13] three of which seem essential: access to numerous natural resources, the possibility of establishing energy cooperation, and the necessary diversification of the Union's sources of supply.

Georgia has significant natural resources, such as manganese, copper, iron, coal, gypsum, and hydroelectric resources, which could benefit the EU.[14]

These natural resources give Georgia economic and geopolitical importance in the region: the country has large reserves of fresh water (rivers), making it independent for agricultural produc-

10 UNESCO. (n.d.-b). Georgia – UNESCO World Heritage Centre. Available at: <https://whc.unesco.org/en/statesparties/ge>.

11 ENA. (n.d.). Qiao: Les nouvelles routes de la soie. Available at: <https://www.ena.fr/content/download/2826/45682/version/1/file/Qiao.pdf>.

12 European Commission. (n.d.-b). European Economy. Available at: <https://ec.europa.eu/economy_finance/publications/pages/publication13389_en.pdf>.

13 European Commission. (n.d.-a). Georgia – Trade – European Commission. Available at: <https://ec.europa.eu/trade/policy/countries-and-regions/countries/georgia/>.

14 World Bank. (n.d.-b). Georgia Overview. Available at: <https://www.worldbank.org/en/country/georgia>.

tion, hydroelectricity (also an export sector), and human and animal consumption. What's more, the country's fertile farmland is ideal for growing cereals, fruit, and vegetables, making it an important agricultural region, again self-sufficient and potentially export-oriented.

When it comes to energy cooperation, it's worth focusing on hydropower, as enhanced cooperation in the energy field could benefit the EU, thereby contributing to Europe's energy security. Georgia has significant hydropower potential, with over 26,000 rivers, 300 of which are usable for generation, and a total technical potential estimated at around 80 terawatt-hours (TWh) per year. At present, only 20% of this potential is exploited, with an annual production of around 12 TWh.

In 2022, Georgia produced around 10 TWh of electricity from its hydroelectric plants, covering more than 75% of its electricity needs, and exports electricity to its neighbors, notably Turkey, Azerbaijan, and Russia. In 2021, electricity exports reached around 1.4 TWh. Several new hydroelectric projects are underway or in development, such as the Nenskra (280 MW) and Namakhvani (433 MW) hydroelectric power plants, with investments totaling several billion dollars.

In response to these new projects, the European Bank for Reconstruction and Development (EBRD) and other international financial institutions have invested significantly in Georgia's energy sector to strengthen its infrastructure and export capacity. As a result, Georgia is considered a key partner in the European Neighborhood Policy and the Eastern Partnership, an EU initiative aimed at strengthening economic and political cooperation with neighboring countries: the EU has allocated over 500 million euros to energy projects in the region, including initiatives to improve energy efficiency and develop electricity transmission infrastructure.

Georgia's largely untapped hydroelectric potential represents a major opportunity to strengthen energy cooperation with the EU. Such collaboration could diversify Europe's energy sources and contribute to its energy security, while promoting Georgia's economic development.[15,16]

Still in the field of energy cooperation, it should also be noted that Georgia also plays a strategic role as a transit corridor for oil and natural gas pipelines linking the Caspian Sea to Western Europe:[17] the Baku-Tbilisi-Ceyhan (BTC) network and the South Caucasus Gas Pipeline (SCP) reduce Europe's dependence on Russia. The same applies to the Southern Gas Corridor project, which includes the SCP and the Trans Adriatic Pipeline (TAP), designed to bring natural gas from Azerbaijan to Europe via Georgia and Turkey, with a capacity of 16 to 31 billion cubic meters per year.

Finally, by integrating Georgia, the EU could diversify its sources of supply of raw materials, energy, and other products, reducing its dependence on certain suppliers or single energy suppliers.

For Europe, this is an important factor in its security and independence: the EU's energy dependence on imports of natural gas and oil is substantial, and even strategically dangerous. By 2021, around 90% of the natural gas and 97% of the oil consumed in the EU will be imported, much of it from Russia. Obviously, following the conflict between Russia and Ukraine, from 2022 onwards, Russian gas imports decreased significantly due to geopolitical tensions, accentuating the need to diversify energy supply sources for the European Union.[18]

15 GNERC. (2022). Annual Report 2022. Georgian National Energy and Water Supply Regulatory Commission.

16 European Neighbourhood Policy and Enlargement Negotiations. (n.d.). Home. Available at: <https://neighbourhood-enlargement.ec.europa.eu/index_en>.

17 European Commission. (2013, June 28). EU Commission welcomes decision on gas pipeline: Door opener for direct link to Caspian Sea. Available at: <https://ec.europa.eu/commission/presscorner/detail/fr/ip_13_623>.

18 European Commission. (2022, Mar 8). REPowerEU: Joint European action for more affordable, secure and sustainable energy. Available at: <https://ec.europa.eu/commission/presscorner/detail/en/IP_22_1511>.

CONCLUSION

Today, perhaps more than ever before in its history, Europe is at a crossroads: its post-World War II conception was based on the need for reconciliation between belligerent countries, the maintenance and preservation of peace, and cooperation in the fields of energy, economics, and social affairs. Its ideological guiding principle was to build a common destiny between nations from the same continent and a shared historical and cultural melting pot, in the face of the two American and Soviet blocs.

Chronologically, Europe was first built with six then nine nations, based on technical considerations, pooling energy resources, harmonizing regulations and customs duties, and moving towards the creation of a single market. Then, little by little, its enlargement to 27 countries, the creation of a form of sovereignty of its own (European passport), and common rules of life (right to abortion, abolition of the death penalty), led Europe to evolve towards a supranational conception, sometimes in opposition to the regalian powers of member states. As we said in our introduction, the economic and financial crises, the rise of international competition from new giants, and the fear of loss of sovereignty felt by many leaders and citizens alike, are jeopardizing the very existence of the European Union: the rise of nationalist powers in virtually all EU countries is challenging the achievements of the current community. Against this tense backdrop, some see EU enlargement as an additional risk of rejection by a section of the population, a rejection often manipulated by xenophobic and isolationist political parties, backed by outside powers intent on weakening the power of the European Union.

However, the enlargement of the Union to include countries that are intrinsically "European", such as Georgia, is perhaps the best way of saving Europe itself: no one can doubt the positive effects of the accession of ten countries, including eight from Central and Eastern Europe, in May 2004. Over the past 20 years, this contribution to the Union has been one of the greatest driving forces behind its economic development, and its ability to grasp what it means to be "European" in the cultural and social sense of the term. Far from being a danger, the accession of a country like Georgia is essential to (re)give the Union the very meaning of its existence: "Let's not be English, French or German. Let us be European". (Victor Hugo, Choses vues, 1887).

BIBLIOGRAPHY:

1. GNERC. (2022). *Annual Report 2022*. Georgian National Energy and Water Supply Regulatory Commission;
2. National Democratic Institute. (2023). *Taking Georgians' pulse – Findings from March 2023 telephone survey*. CRRC Georgia. Available at: <https://www.ndi.org/publications>.

Web sources:

1. Cairn.info. (2004). *L'Europe et ses frontières*. Études, (6), 729. Available at: <https://www.cairn.info/revue-etudes-2004-6-page-729.htm>;
2. Consilium. (n.d.-a). *Defence and security policy*. Available at: <https://www.consilium.europa.eu/en/policies/defence-security/>;
3. Consilium. (2022). *Conclusions of the European Council, 23-24 June 2022*. Available at: <https://www.consilium.europa.eu/media/57452/2022-06-2324-euco-conclusions-fr.pdf>;
4. EEAS (07.09.2023. The *EU and Georgia*. Available at: <https://www.eeas.europa.eu/georgia/european-union-and-georgia_en?utm_source=chatgpt.com>;
5. ENA. (n.d.). *Qiao: Les nouvelles routes de la soie*. Available at: <https://www.ena.fr/content/download/2826/45682/version/1/file/Qiao.pdf>;

6. European Commission. (n.d.-a). *Georgia – Trade – European Commission*. Available at: <https://ec.europa.eu/trade/policy/countries-and-regions/countries/georgia/>;
7. European Commission. (n.d.-b). *European Economy*. Available at: <https://ec.europa.eu/economy_finance/publications/pages/publication13389_en.pdf>;
8. European Commission. (2013, June 28). *EU Commission welcomes decision on gas pipeline: Door opener for direct link to Caspian Sea*. Available at: <https://ec.europa.eu/commission/presscorner/detail/fr/ip_13_623>;
9. European Commission. (2022, Mar 8). *REPowerEU: Joint European action for more affordable, secure and sustainable energy*. Available at: <https://ec.europa.eu/commission/presscorner/detail/en/IP_22_1511>.
10. European Monitor (2013, Friday 28). Croatia's accession to the European Union – Q&A – Main contents
11. Available at: <https://www.eusmonitor.eu/9353000/1/j9vvik7m1c3gyxp/vjavfyp3hcy0>;
12. European Neighbourhood Policy and Enlargement Negotiations. (n.d.). *Home*. Available at: <https://neighbourhood-enlargement.ec.europa.eu/index_en>;
13. Eurostat. (n.d.). *Tourism statistics*. Available at: <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tourism_statistics>;
14. UNESCO. (n.d.-a). *Georgia – UNESCO World Heritage Centre*. Available at: <https://whc.unesco.org/en/statesparties/ge> ;
15. UNESCO. (n.d.-b). *Georgia – UNESCO World Heritage Centre*. Available at: <https://whc.unesco.org/en/statesparties/ge>;
16. World Bank. (n.d.-b). *Georgia Overview*. Available at: <https://www.worldbank.org/en/country/georgia>.

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