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Research Article

Institutional Performance Assessment: Systematic Review of Approaches, Metrics and Indicators

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ABSTRACT

The assessment of institutionality is pivotal in determining the robustness of social, political and economic frameworks. However, the heterogeneity of methodologies and the absence of a consensus on unified criteria impede the comparability and practical application of results. The extant literature has addressed this issue through normative and empirical measurements, with no consensus on the most appropriate indicators. This underscores the necessity for integrative methodologies that seamlessly amalgamate quantitative and qualitative data. The present research aims to identify the main measurement approaches and methodologies, analyse the relationship between different indicators, and evaluate their applicability in various contexts. The PRISMA 2020 methodology is employed, structured in four stages: identification, screening, eligibility, and inclusion, ensuring rigor, transparency, and replicability. The findings indicate that integrated methodological frameworks would improve the validity and reliability of measurements, while adapting approaches to different sectors would avoid reductionism that compromises their usefulness. Standardising processes and incorporating technologies can optimise the assessment of institutionality and its impact on governance and development. It is imperative to acknowledge that institutional measurement is an evolving field, necessitating flexible and adaptive approaches to respond to changes in assessment paradigms.

Keywords: Institutional analysis; governance indicators; evaluation methodologies; normative and empirical approaches; institutionality and development.

INTRODUCTION

Institutionality is defined as the set of norms, rules and structures that organise and regulate the functioning of a social, political or economic system. Its analysis enables the assessment of state stability, the effectiveness of public policies, and the capacity of societies to generate development. From a theoretical perspective, institutionality establishes the framework within which power is exercised and resources are managed, in addition to influencing citizen trust and the legitimacy of government decisions (Camilleri, 2021).

The measurement of institutionality is imperative to ascertain its impact across diverse domains. The strength of institutions is associated with the effectiveness of governance, economic growth, and the reduction of inequality. The assessment of institutionality is based on indicators such as the quality of the rule of law, the level of

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corruption, the independence of the judiciary, and administrative efficiency. However, the process of measurement is encumbered by methodological challenges, as it necessitates a combination of qualitative and quantitative indicators, the applicability of which varies depending on the context and the theoretical approach adopted (Mio et al., 2022).

Traditional approaches to measuring institutionality can be categorised into two main types. The first of these is normative measurement, which considers the degree of compliance with institutional principles. The second is empirical measurement, which analyses observable data to assess institutional performance. The creation of more precise and comparable tools is facilitated by a solid theoretical framework, which in turn allows for a better understanding of institutionality in different contexts (Sekarna, 2022). Furthermore, the integration of advanced technologies and the digitalisation of processes has been demonstrated to optimise data collection and analysis, thereby contributing to the enhancement of the measurement of institutionality and its impact across various sectors (García-Muiña et al., 2021).

The measurement of institutionality is a topic of debate in the literature, with no clear consensus on the most appropriate criteria and methodologies for its evaluation. This absence of consensus can be attributed to the heterogeneity of the approaches employed, encompassing qualitative and quantitative indicators, as well as theoretical models with disparate epistemological foundations. Some studies employ normative measurement based on compliance with institutional principles, while others use empirical measurement based on observable data. However, these approaches have limitations that hinder the comparability and applicability of the results in different contexts (Harsono et al., 2024).

The heterogeneity of approaches gives rise to several issues. Primarily, methodological variability engenders inconsistencies in measurement, thereby impeding precise and uniform assessment of institutionality across diverse geographical areas or sectors. Secondly, biases in data collection compromise the validity of indicators, particularly when they depend on subjective perceptions or restricted sources of information. Finally, the dearth of a shared frame of reference curtails the capacity of studies to engender comprehensive models that facilitate global or regional comparisons (Sun et al., 2021).

The absence of coordination in measurement methodologies has the effect of impeding the development of tools for the purpose of evidence-based decision-making and policymaking. Absent a reliable measurement system, the assessment of institutional effectiveness and its impact on governance, economic development, and political stability remains uncertain. The utilisation of artificial intelligence has been demonstrated to enhance data collection and analysis within complex environments (Dahri et al., 2024). However, the overreliance on such technologies gives rise to concerns regarding the reliability of analytical systems and their impact on institutional decision-making (Bhogilla et al., 2024).

In this sense, the objective of this research is threefold: firstly, to identify the main approaches and methodologies used to measure institutionality; secondly, to explore the relationship between different measurement indicators and their applicability in different contexts; and thirdly, to analyse the advantages and limitations of the predominant methods in the literature.

A series of questions have been formulated to guide the study and to structure the analysis of institutionality measurement.

1. What are the main approaches and methodologies used to measure institutionality?
2. Which indicators are most frequently used to measure institutionality, and what biases might they present?
3. How does the applicability of measurement indicators vary in different national and sectoral contexts?
4. Which methodologies have demonstrated the greatest validity and reliability in assessing institutionality?
5. What are the main challenges in developing a comprehensive institutionality measurement model?

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In this regard, the article puts forward a structure that facilitates the synthesis and classification of prevailing approaches to institutional measurement, thereby establishing a comparative framework that examines their respective strengths and limitations. Moreover, the research endeavours to ensure practical applicability in the realms of policymaking and decision-making. By addressing a lacuna in extant literature, this study contributes to the standardisation of institutional measurement, facilitating its evaluation in different contexts and promoting the development of more precise and comparable methodologies.

METHODOLOGY

The selection process for studies is conducted in accordance with the PRISMA 2020 methodology, encompassing three distinct stages. Initially, studies are identified through the utilisation of structured search strategies within indexed databases. Subsequently, duplicate records and irrelevant documents are excluded based on their titles and abstracts, constituting the screening stage. The final stage is the eligibility stage, wherein full-length studies are subjected to a rigorous review process. This is guided by predefined criteria, ensuring the selection of studies that meet specific standards. The application of these criteria facilitates the objective filtration of literature, thereby ensuring the inclusion of relevant and high-quality research. This approach enables a comprehensive analysis of the various approaches and methodologies employed in measuring institutionality (Page et al., 2021).

Eligibility criteria

The selection of studies was conducted in accordance with a series of inclusion and exclusion criteria, the purpose of which was to ensure the relevance, quality, and methodological consistency of the analysed literature. Priority was given to research that contributed to the study of institutional measurement, considering diverse approaches and validated methodologies.

Peer-reviewed studies that had been published in journals indexed in Scopus and Web of Science were included in the analysis. The selection encompassed research with qualitative, quantitative, and mixed approaches, ensuring a comprehensive perspective on institutional measurement, reflecting the conceptual and methodological evolution of the topic. Publications in English and Spanish from the last 15 years were considered.

The studies had to analyse institutional quality, capacity, performance, or effectiveness through the use of metrics, indicators, comparative methodologies, or benchmarks. In addition, studies that explored the relationship between institutional measurement and governance were also included, with a view to consolidating a structured analytical framework.

The exclusion process was carried out in three phases. In the initial phase, documents with indexing errors were eliminated, including duplicate studies, incorrect records, or those not related to the measurement of institutionality. In the second phase, research without access to the full text was discarded, since a detailed review of their methodologies and results was necessary to evaluate their relevance. In the final phase, studies of low relevance were excluded through a critical evaluation of their content. Studies that did not analyse the measurement of institutionality as a central axis or that presented inadequate methodologies for comparison were discarded. This rigorous process of elimination enabled the consolidation of a set of studies that offer methodological and conceptual evidence, thereby ensuring a rigorous and structured analysis.

Sources of information

The present systematic review is based on literature obtained from two databases, Scopus and Web of Science, which are recognised for their methodological rigour and multidisciplinary coverage. The combination of both sources allows access to high-impact studies and ensures a selection based on peer-reviewed evidence. The integration of these two databases enables a more comprehensive review, thereby reducing the biases associated with single-source coverage. Scopus boasts a more extensive collection of journals, while Web of Science places a premium on publications with a high impact factor and a more rigorous selection process (Asubiaro et al., 2024).

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Scopus is a scientific database with broad coverage of the social sciences, economics, and governance. Its structured design enables the retrieval of articles from high-impact journals, facilitating access to studies that are methodologically sound and current. Furthermore, its capacity to perform bibliometric analyses allows for the identification of trends in research on institutional measurement (Asubiaro et al., 2024).

Web of Science is distinguished by the reliability and rigor in the selection of publications. Its indexing adheres to rigorous quality criteria, ensuring that the included studies have a consistent methodological basis (Asubiaro et al., 2024). In the specific domains of social sciences and economics, it facilitates access to research that adheres to stringent academic standards, thereby reinforcing the validity of the outcomes obtained (Asubiaro et al., 2024).

Search strategy

The search strategy was designed to retrieve relevant studies on institutional measurement in Scopus and Web of Science, applying a specific equation for each database. The formulation of these equations was derived from the inclusion criteria, ensuring that the selected studies analysed indicators, methodologies, and approaches used in institutional assessment.

The search equation employed in Scopus was as follows:

TITLE ("institutional measurement" OR "institutional assessment" OR "institutional evaluation" OR "institutional performance" OR "institutional quality" OR "institutional capacity" OR "governance assessment" OR "governance measurement" OR "institutional effectiveness") AND TITLE ("metrics" OR "indicators" OR "framework" OR "methodology" OR "index" OR "benchmarking" OR "quantification" OR "scoring" OR "evaluation criteria").

In Web of Science, the same structure was applied, adapted to its search engine:

TS=("institutional measurement" OR "institutional assessment" OR "institutional evaluation" OR "institutional performance" OR "institutional quality" OR "institutional capacity" OR "governance assessment" OR "governance measurement" OR "institutional effectiveness") AND TS=("metrics" OR "indicators" OR "framework" OR "methodology" OR "index" OR "benchmarking" OR "quantification" OR "scoring" OR "evaluation criteria").

In order to optimise the accuracy of the results, Boolean operators were employed, thus facilitating the efficient combination of key terms. Selection filters were applied to restrict the search to academic publications, empirical studies, and systematic reviews, ensuring the inclusion of methodologically rigorous and up-to-date research.

Selection process

The selection process was initiated with a preliminary screening of titles and abstracts to exclude studies that did not address the measurement of institutionality. Exclusion criteria were then applied in three phases. Initially, documents with indexing errors, such as duplicate records or studies not related to the topic, were eliminated. Subsequent to this, research without full-text access was excluded, ensuring a detailed analysis. Finally, studies with low methodological relevance, as determined through critical appraisal of the content, were discarded. The final selection of studies was then manually validated to ensure consistency with the research objectives and their methodological quality.

The selection and exclusion process at each stage of the systematic review is detailed in Figure 1, which presents the flowchart recommended by the PRISMA 2020 declaration.

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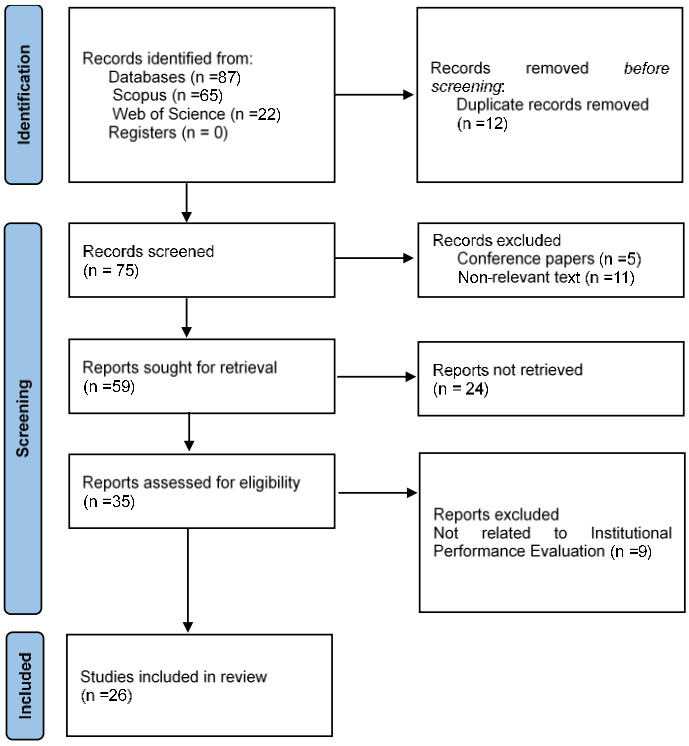

Figure 1. PRISMA flowchart. Prepared by the authors based on Scopus and Web of Science.

Data processing

The data were then organised and categorised in Excel, thus facilitating the structured management of the selected studies. Variables such as the year of publication, the authors, the methodology, the indicators, and the main findings were recorded, facilitating comparative analysis. The processing of the data included both quantitative and qualitative analysis. The quantitative analysis identified the frequency of methodological approaches and trends in the measurement of institutionality. The qualitative analysis examined the conceptual depth of each study. The integration of these approaches yielded the identification of patterns within the extant literature, thereby providing a robust foundation for interpreting the evolution and applicability of methodologies employed in the measurement of institutionality.

Risk of bias

The risk of bias assessment was performed by analysing the methodological quality of the selected studies, considering possible limitations in the sources used. The utilisation of Scopus and Web of Science as databases might have introduced selection bias, as both possess specific indexing criteria that may have excluded relevant studies published on alternative platforms. Furthermore, the formulation of the search strategy with predefined terms could have limited the retrieval of research with alternative approaches to the measurement of institutionality. A potential reporting bias was also identified, as some studies may have omitted non-significant or unfavorable results. To address these potential biases, transparency and replicability criteria were implemented to ensure a rigorous and consistent selection process.

RESULTS

The results are structured in accordance with the research questions in order to examine approaches and methodologies for measuring institutionality. The primary indicators utilised are analysed, with consideration given to their applicability across diverse national and sectoral contexts, as well as their validity and reliability.

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The most accurate methodologies for assessing key institutional factors are identified, and the challenges that hinder the development of a comprehensive measurement model are highlighted. A central aspect of this discussion is the need to integrate quantitative and qualitative data. Table 1 provides a summary of the studies that were included in the detailed analysis.

Title	APA Citation
Data management unit and critical indicators for institutional performance evaluation	(Souza Filho et al., 2021)
How to study institutional quality in systems of r&d and higher education? An analitical framework and research strategy	(Esquinas & Soriano, 2023)
Indicators to Evaluate the Institutional Effectiveness of National Climate Financing Mechanisms	(Sheriffdeen et al., 2020)
Local government expenditures, institutional quality and the inclusive economic development index (iedi) in indonesia	(Mardiyani et al., 2023)
The construction and testing of a framework to assure the institutional quality of work-integrated learning	(Campbell et al., 2021)
A conceptual framework to help evaluate the quality of institutional performance	(Kettunen, 2008)
Application of an institutional assessment and design (IAD)-enhanced integrated regional energy policy and planning (IREPP) framework to island states	(Shah et al., 2020)
Can the resource curse be reversed through financialization, human capital, and institutional quality? Evidence from Sustainable Development Index	(Destek et al., 2023)
Comparative analysis of Mexico's independent system operator with U.S. peers: Institutional assessment structures and performance metrics	(Ibarra-Yúnez et al., 2021)
Determinants of renewable electricity development in Europe: Do Governance indicators and institutional quality matter?	(Saba & Biyase, 2022)
Does Institutional Quality Matter for Trade? Institutional Conditions in a Sectoral Trade Framework	(Álvarez et al., 2018)
Foster care as risk or protective factors: Institutional evaluation and quality indicators; [O abrigo como fator de risco ou proteção: Avaliação institucional e indicadores de qualidade]	(Salina-Brandão & Albuquerque Williams, 2009)
IGovP: The public governance assessment index — A state planning instrument tool and social control by the citizen	(Oliveira & Pisa, 2015)
Implementation constraints on Israel-palestine water cooperation: An analysis using the water governance assessment framework	(Dai, 2021)
Improvement path for resource-constrained cities identified using an environmental co-governance assessment framework based on BWM-mV model	(Wang et al., 2021)
Institutional thickness and institutional effectiveness: Developing regional indices for policy and practice in Australia	(Beer & Lester, 2015)
Limitations of current governance indicators to measure institutional quality in a metropolitan area with a tourist vocation	(Sandoval & Ortega, 2020)

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Method for the estimation of institutional quality indexes using fuzzy logic	(Ribeiro, 2022)
Non-performing Assets and Institutional Quality Indicators: Evidence from Developing Countries	(Goyal et al., 2023)
On the Technology-Growth Relationship: Does the Institutional Quality Matter? A Panel Simultaneous Equation Framework	(Saidi et al., 2024)
Reflections on the Methodology of Systemic Institutional Evaluations: The Example of the Evaluation of Engagement Global	(Schwedersky et al., 2022)
Stochastic dominance spanning and augmenting the human development index with institutional quality	(Pinar et al., 2022)
The importance of geopolitical risk and institutional quality indicators on foreign direct investment to brics countries	(Cetin & Yaman, 2023)
The Influence of Institutional Quality and Financial Risk on Stock Market Index: An Empirical Study for Turkey	(Iltas & Ucler, 2019)
The role of local government in the drive for sustainable development public policies. An analytical framework based on institutional capacities	(Salvador & Sancho, 2021)
Wood fuel consumption, institutional quality, and forest degradation in sub-Saharan Africa: Evidence from a dynamic panel framework	(Sulaiman et al., 2017)

Table 1. Studies included in the research. Prepared by the authors based on Scopus and Web of Science.

The analysis of the methodological approaches employed indicates that panel data-based methods are the most common. These are followed by methodologies focused on causality and cointegration tests, along with survey research and dynamic models, which have a significant presence in the literature. Other approaches, such as comparative institutional analysis, index construction, and qualitative comparative analysis, demonstrate consistent utilisation. Systemic assessment, strategic management, institutional capacity, and policy analysis are also represented, albeit less frequently.

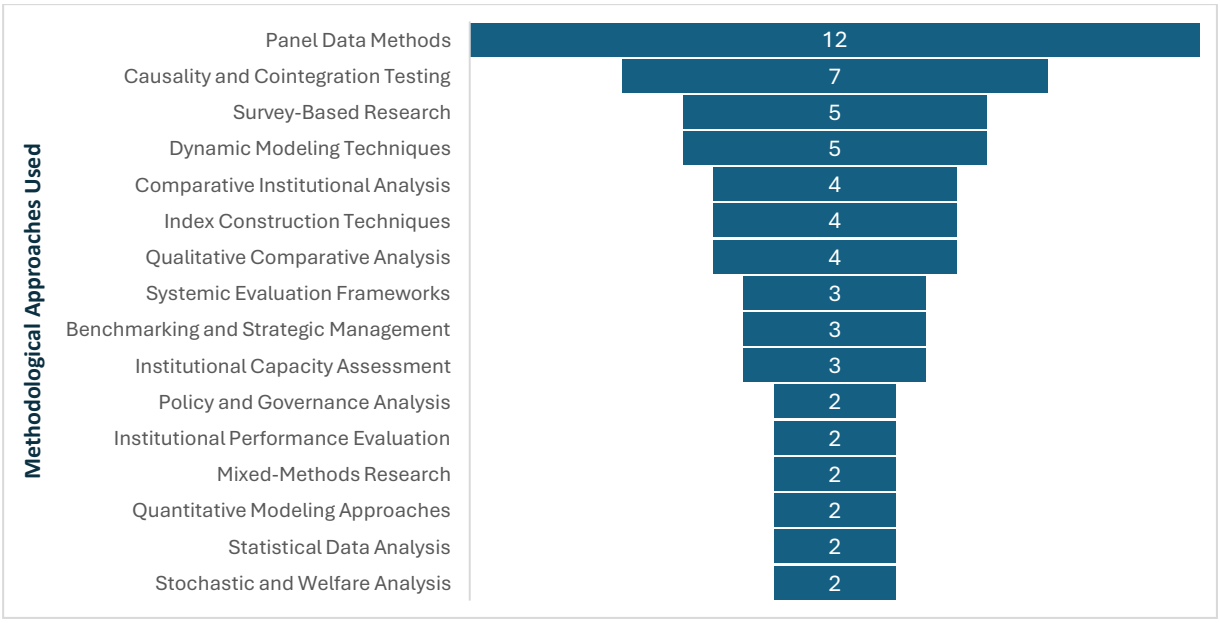

Figure 2. Distribution of methodological approaches used. Prepared by the authors based on Scopus and Web of Science.

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The analysis of the measurement indicators utilised reveals a higher frequency of those related to institutional quality. Approaches to institutional capacity and financial performance are also frequently used, indicating their relevance in the study of institutionality. Indicators of governance, economic development, and environmental context are also used extensively. In contrast, indicators associated with infrastructure, foreign investment and technological quality are utilised less frequently in the reviewed research.

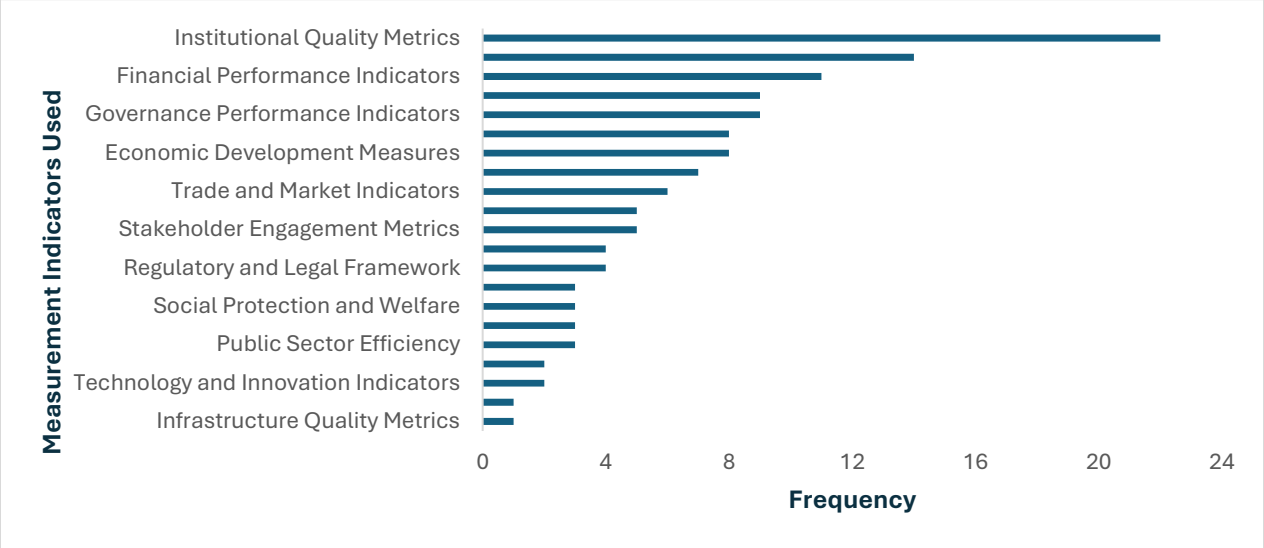

Figure 3. Distribution of measurement indicators used. Prepared by the authors based on Scopus and Web of Science.

The analysis of the context of application indicates that cross-country analysis studies are the most prevalent in the reviewed literature. Research on higher education institutions, transparency, and institutional assessment also has a significant presence. Conversely, approaches that prioritise local and federal governments, public governance assessment, and sustainable development policies are underrepresented. Finally, studies on electricity markets, trade, child protection, conflict regions, metropolitan governance, and aquaculture are less common in the analysed data.

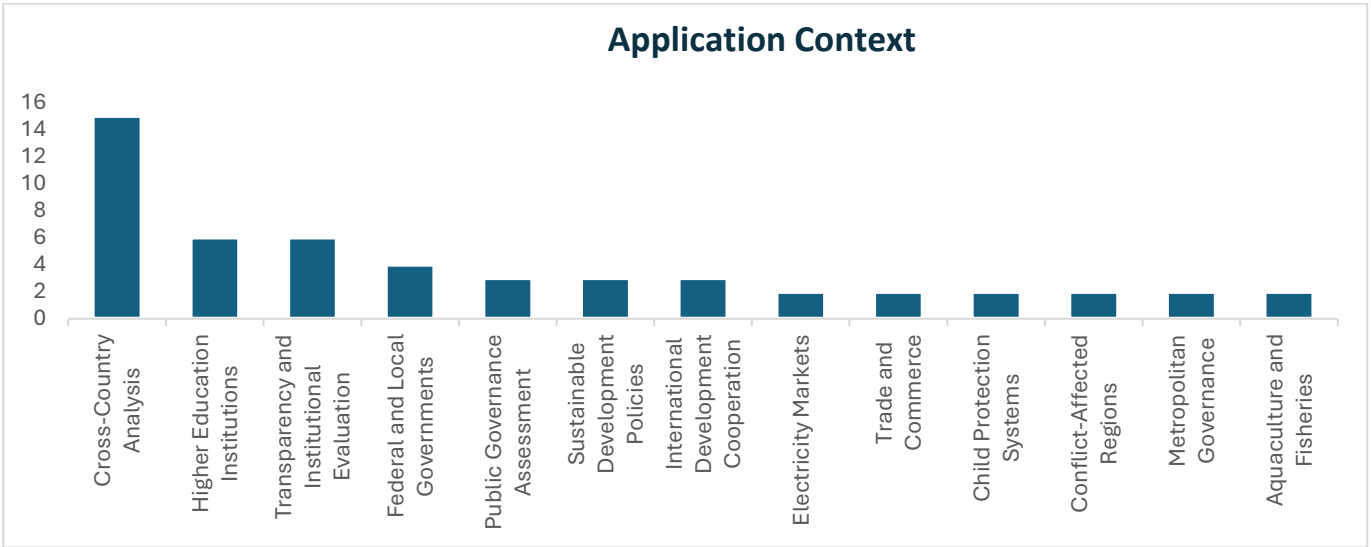

Figure 4. Distribution of the application context. Prepared by the authors based on Scopus and Web of Science.

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The validity and reliability analysis demonstrates a predominant use of statistical robustness tests, underscoring the necessity to assess the consistency of the applied models. Data validation is also frequent, followed by the evaluation of theoretical frameworks and the construction of indices, highlighting the importance of solid methodological structures. Empirical validation, expert consultation, and governance analysis are less prevalent. Finally, contextual analysis, causality, and model selection appear less represented in the reviewed literature.

Figure 5. Distribution of validity and reliability approaches. Prepared by the authors based on Scopus and Web of Science.

The analysis of the methodological challenges identified demonstrates that data fragmentation is the most prevalent problem, reflecting difficulties in the availability and consistency of information. Variability in governance indicators, a lack of standardisation, and measurement biases are also significantly present in the extant literature. Additional challenges encompass the evaluation of institutional quality, regulatory inconsistencies, and limitations in the generalisation of results. Finally, underrepresentation is evident in the literature concerning endogeneity, financial flexibility, and subjectivity in the assessment.

Figure 6. Distribution of identified methodological challenges. Prepared by the authors based on Scopus and Web of Science.

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The organisation of the results according to the initial research questions enabled an analysis of methodological approaches, measurement indicators, application context, validity, reliability, and methodological challenges in the assessment of institutionality. The analysis identified dominant trends, variations in the applicability of methods, and limitations that affect measurement accuracy. The necessity for integrated, standardised frameworks to enhance the comparability and robustness of institutionality studies was also emphasised.

DISCUSSION

The discussion has been organised into sections so that the findings on the types of institutional measurement can be examined from comparative and conceptual perspectives. Initially, a comprehensive analysis of the results is conducted, with the objective of identifying patterns and trends in institutional measurement. Following this, the findings are then compared with those from previous studies, highlighting any similarities, differences and methodological factors that explain the observed variations. The subsequent presentation of a conceptual framework is intended to facilitate the integration of the identified elements into future research and to provide a basis for further theoretical development. Furthermore, the theoretical, political and practical implications are presented, highlighting their impact on public policymaking and the assessment of institutional measurement in various contexts. Finally, the limitations of the study are described, addressing methodological and scope restrictions, and lines of future research are proposed to expand the analysis and optimise institutional measurement approaches.

Analysis of results

The analysis of methodological approaches demonstrates that panel data methods are the most widely used to measure institutional measurement, followed by causality tests, cointegration tests, and surveys. These results are consistent with those of Saba and Biyase (2022), who applied econometric techniques to examine the influence of institutional quality on renewable energy development in Europe, highlighting the use of cointegration and generalized moments models. In a similar vein, Mardiyani et al. (2023) utilised the GMM method to investigate the relationship between institutional quality and inclusive economic development in Indonesia, thereby corroborating the relevance of these approaches in institutional assessment.

The analysis of the measurement indicators reveals a higher frequency of those linked to institutional quality. Esquinas and Soriano (2023) propose a methodological framework to assess their impact on universities and research centres. Institutional capacity and financial performance are also relevant, in line with the findings of Souza Filho et al. (2021), who suggest data management systems to improve institutional assessment. Other indicators, such as governance and economic development, are also present, albeit to a lesser extent. In contrast, infrastructure, foreign investment, and technological quality are less frequently addressed in the reviewed studies.

A cross-country comparative study is the most common analysis of application contexts. Research on higher education, transparency, and institutional assessment is also relevant, aligning with Kettunen (2008), who proposes a framework for measuring institutional performance. In contrast, areas such as local and federal governments, public governance, and sustainable development policies are less frequently addressed. Specific sectors, such as electricity markets, trade, and conflict regions, are underrepresented, in line with Shah et al. (2020), who point to the impact of institutional factors on the viability of energy policies.

The validity and reliability analysis demonstrates a predominant utilisation of statistical robustness tests, underscoring the necessity to evaluate model consistency. Data validation and index construction represent pivotal approaches to the enhancement of methodological frameworks. Conversely, methods such as empirical validation, expert consultation, and governance analysis have seen limited adoption, underscoring their inadequacy. As highlighted by Mardiyani et al. (2023) and Ibarra-Yúnez et al. (2021), the utilisation of contextual analysis and model selection approaches is underrepresented, underscoring the challenges encountered in conducting institutional assessments.

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The measurement of institutionality is hindered by limitations in data availability and consistency, with fragmentation being a recurring problem. The variability of governance indicators and the lack of standardisation hinder comparability, while measurement biases reduce precision. Souza Filho et al. (2021) emphasise the necessity for a unified data management framework, while Campbell et al. (2021) underscore the importance of frameworks to ensure quality. Endogeneity and subjectivity in evaluation are less frequently considered methodological challenges in the literature.

Comparison of results with other studies

Research on the measurement of institutionality exhibits both similarities and differences with previous studies across various dimensions. Modell (2009) provides an analysis of the evolution of institutional performance measurement in the public sector accounting literature. The two studies highlight the need for integrated approaches that go beyond the exclusive consideration of exogenous institutional pressures and recognise the role of agency and internal dynamics in the transformation of measurement practices. However, the present research emphasises data fragmentation and the lack of standardisation in governance indicators, while Modell (2009) prioritises the relationship between institutional logics and rational choice.

Camilleri's (2021) study appraises the quality of service and performance in higher education institutions in the post-pandemic context. Despite the divergent subject matter, both studies underscore the significance of robust methodological frameworks and unified measurement systems to ensure the comparability of results. However, Camilleri (2021) focuses on the evaluation of institutional performance from the perspective of service delivery, while the present study addresses institutional frameworks from the perspective of governance and political stability.

Siti-Nabiha and Jurnali (2020) analyse the implementation of performance measurement systems in a local government in Indonesia. There is a consensus regarding the identification of methodological challenges in institutional evaluation, particularly the centralisation of indicator management and the influence of political factors on their application. However, while Siti-Nabiha and Jurnali (2020) study the implementation of performance measurement systems, this study emphasises the variability of indicators and the lack of standardized evaluation mechanisms in different contexts.

Lehtonen (2005) examines the evaluation of environmental policies in the context of sustainable development and considers institutional assessment as a mechanism for legitimation and accountability. A consensus emerges between the two studies on the necessity of incorporating quantitative indicators and the dynamics of actors, along with the influence of international organisations in defining reference frameworks, in the measurement of institutionality. However, Lehtonen (2005) focuses on environmental policies and their impact on sustainable development, while the present study addresses institutionality from a broader perspective, including governance and political stability.

Wermers (2011) conducted a study that examined the measurement of the performance of mutual funds and institutional accounts. Employing an advanced quantitative approach, the study sought to address the limitations of conventional methods. Despite the differences in their respective subjects, both studies underscore the necessity to enhance measurement models with a view to reducing bias and enhancing the accuracy of analyses. However, the present study focuses on the measurement of institutionality in the field of governance and public policy, while Wermers (2011) focuses on the evaluation of financial performance.

In summary, the present research corroborates the findings of earlier studies in identifying methodological challenges and the necessity for integrated approaches to measuring institutional performance. Nevertheless, discrepancies in theoretical and methodological approaches underscore the significance of context in determining the applicability of indicators and the validity of results. The strength of the findings lies in the identification of common trends in the literature, although there are still gaps in the standardisation of measurement systems and in mitigating biases in the assessment of institutionality.

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Proposed conceptual framework

The conceptual framework for measuring institutionality (see Figure 7) is structured into five key dimensions: methodological approaches employed, measurement indicators used, context of application, validity and reliability, and methodological challenges identified. The interrelationship between these components facilitates a comprehensive assessment, integrating multilevel approaches, classifying indicators as structural, functional, and perceptual, and considering the influence of the political and regulatory environment. Furthermore, it highlights the importance of standardisation in data collection and reducing bias through robust measurement techniques.

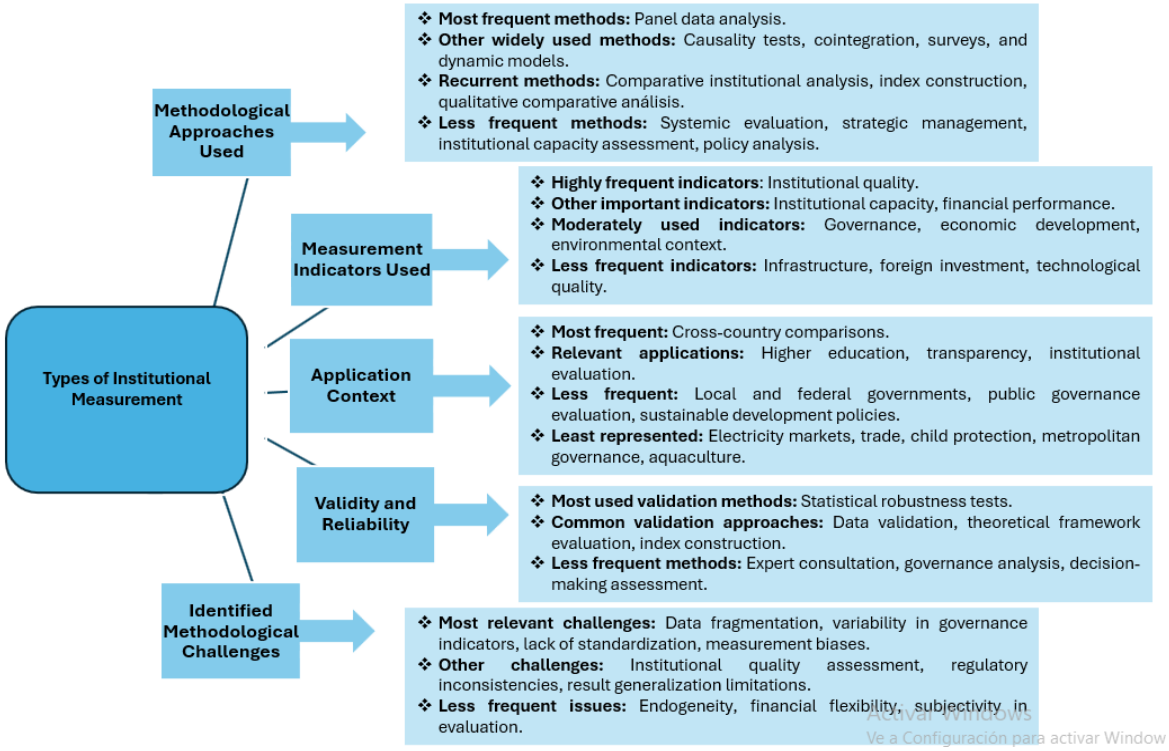

Figure 7. Conceptual framework for measuring institutionality. Prepared by the authors.

Implications

The study's theoretical, policy, and practical implications are presented by consolidating a conceptual framework that facilitates the assessment of institutionality from five key dimensions. The findings emphasise the necessity to integrate diverse methodological approaches, to classify measurement indicators, and to consider the model's applicability in different sectors. The study also underscores the importance of ensuring the validity and reliability of measurement instruments to improve data comparability and optimise the design of public policies and organisational strategies.

This study makes a significant contribution to the existing literature on institutionality by establishing a structured framework for its measurement and analysis. The classification of methodological approaches facilitates the identification of research trends, with a particular emphasis on the utilisation of panel data, causality tests, and comparative methodologies. The integration of multilevel approaches facilitates understanding of the interaction between formal, normative, and cultural structures.

The categorization of indicators into structural, functional, and perceptual strengthens the comparability of previous and future studies. The proposed framework enables the evaluation of political stability, organisational

performance, and public perception of institutions. Empirical validation of the model strengthens its applicability in longitudinal and comparative studies. Furthermore, it provides a theoretical basis for analysing the evolution and effectiveness of institutions, promoting new lines of research on their impact in different environments.

From a policy perspective, the results offer guidelines for public policymakers in the evaluation and design of institutional strategies. The identification of structural indicators facilitates the development of evidence-based policies to enhance governance, political stability, and institutional quality. The incorporation of functional and perceptual indicators enables the formulation of strategies that optimize organisational performance and strengthen public trust in institutions.

The model's capacity for adaptation across diverse sectors renders it a suitable candidate for implementation in specific contexts. Governments and international organisations can adjust their measurement strategies according to specific needs, thereby ensuring their relevance and effectiveness. The integration of multilevel approaches in measurement facilitates the evaluation of public policies, taking into account the formal structure of institutions and their interaction with the sociopolitical and economic environment.

However, it is important to note that standardisation in data collection and analysis remains a key challenge. The absence of consistent criteria has the effect of hindering the comparability of results and the formulation of informed policies. It is therefore recommended that methodological protocols be developed that harmonise measurement across different contexts, thereby ensuring data reliability and the effectiveness of policy strategies.

The proposed model has implications for the measurement and evaluation of institutions in various sectors. Within the public sector, it facilitates the analysis of government performance and the efficiency of public policies, providing tools for monitoring and continuous improvement. Within the domain of education, the model enables the assessment of institutional quality in universities and research centres, thereby facilitating the formulation of strategies to enhance academic governance.

In the financial sector, it facilitates the measurement of the institutional framework of markets and banking systems, identifying factors that affect their stability and transparency. In the domain of sustainability, it facilitates the evaluation of environmental governance and the effectiveness of sustainable development policies, thereby contributing to the efficient management of natural resources and climate change mitigation.

The identification of methodological challenges, such as data fragmentation and variability in governance indicators, facilitates the design of strategies to improve information collection and analysis. The implementation of robust measurement techniques and the validation of theoretical frameworks strengthens the quality of institutional framework studies and ensures their applicability in decision-making.

Limitations

The study presents limitations related to the methodological design, the interpretation of results, and data availability. The selection of measurement approaches and techniques has been demonstrated to influence the representation of institutionality, with each method exhibiting distinct advantages and limitations that affect the validity and generalisability of the findings. The absence of a universally accepted standard for measuring institutionality complicates the comparison of results across studies and contexts, potentially leading to inconsistencies.

The limitations of interpretation are attributable to the complexity of institutional factors, whose measurement is contingent on structural, functional, and perceptual indicators. The interdependence of these indicators can hinder the establishment of direct causal relationships and may compromise the precision of the analysis.

Furthermore, the availability and quality of data can act as a potential source of bias. The presence of difficulties in data collection, the existence of heterogeneous databases, and the subjectivity inherent in perceptual measurements have the potential to compromise the reliability of the results. The reliance on secondary sources

can compromise the timeliness and accuracy of the data used to assess institutionality in different contexts, thereby reducing the generalisability of findings.

Lines of future research

Future research on the measurement of institutionality must therefore overcome the identified limitations and explore new directions that improve the accuracy and applicability of models. A priority is the development of methodological standards that allow for homogeneous and comparable measurement across different contexts. The absence of a universal framework hinders the integration of results and limits the generalisation of findings. Consequently, there is a necessity to establish methodological guidelines that facilitate the collection and analysis of institutional data.

From a methodological perspective, combining qualitative and quantitative methods in multilevel studies would allow for a more accurate assessment of institutionality and its evolution over time. The incorporation of artificial intelligence and machine learning models in the measurement of structural, functional, and perceptual indicators would optimise the identification of patterns and trends in the data.

Another pertinent line of enquiry pertains to the validation and adaptation of the conceptual framework across diverse sectors and geographic regions. The concept of institutionality is understood to be subject to variation due to the influence of political, economic, and social factors. Consequently, its measurement should be analysed in specific contexts, including emerging economies, decentralised governance systems, and strategic sectors such as education, health, and finance. The undertaking of comparative studies across countries or regions would facilitate an assessment of the model's robustness and its capacity to adapt to differing realities.

Furthermore, it is necessary to analyse the impact of digitalisation and technology on the measurement of institutionality. The availability of open data, the automation of administrative processes, and the use of blockchain in public management have the potential to transform institutional assessment methods, improving transparency and reducing the margin of error in data collection.

Future research should improve methodological precision, expand the model's applicability across diverse sectors and geographic contexts, and leverage new technologies to optimize the measurement of institutionality. These advancements will serve to strengthen the extant literature in this field and facilitate the formulation of evidence-based public policies.

CONCLUSIONS

The measurement of institutionality is a methodological and conceptual challenge that necessitates integrated approaches and unified criteria to ensure its applicability in different contexts. The analysis conducted herein highlights the need to strengthen the validity and comparability of indicators, thereby overcoming the fragmentation and heterogeneity present in the extant literature. The consolidation of methodological frameworks that combine quantitative and qualitative data facilitates a more profound comprehension of institutional dynamics and their ramifications on governance, economic development, and political stability.

The findings suggest that measuring institutionality should not be confined to structural or financial indicators but should encompass functional and perceptual dimensions to reflect the intricacy of institutional systems. The heterogeneity of the approaches employed underscores the necessity to adapt methodologies to the particularities of each sector and level of analysis, thereby circumventing reductionist interpretations that constrain the applicability of the findings.

Standardising measurement processes facilitates the comparison of results across regions and sectors. The identification of recurring methodological challenges necessitates the development of innovative strategies to mitigate bias and enhance data reliability. The study of institutionality is not static; it must consider the evolution of governance systems and changes in measurement paradigms to adapt to the demands of the global environment.

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