



Comparative analysis of the government's numerical composition of Ministers or Secretaries of state of the Upper-Middle-Income countries in the seven continents of the world.

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Abstract

This study examines the determinants of cabinet size across upper-middle-income countries using a quantitative, cross-sectional comparative approach. Drawing on a sample of 26 countries representing multiple global regions, the research analyzes how demographic, economic, and institutional factors shape the size of national executive cabinets. The study employs both descriptive statistics and multiple linear regression to evaluate the relationship between cabinet size (dependent variable) and three key independent variables: population size, gross domestic product (GDP), and political system. Logarithmic transformations of population and GDP are used to capture proportional effects and improve model performance.

The findings reveal that cabinet size varies substantially across countries, ranging from small executive structures of approximately 10 ministers to larger cabinets exceeding 35 members. Descriptive analysis shows that smaller states tend to maintain more compact cabinets, while larger and more economically complex countries exhibit expanded executive structures. The regression results indicate a moderate positive relationship between cabinet size and the explanatory variables ($R = 0.483$), with the model explaining approximately 23.3% of the variation in cabinet size. Among the predictors, GDP emerges as the strongest determinant, suggesting that economic complexity plays a critical role in shaping government structure. Population size also shows a positive but weaker influence, while the political system variable exhibits a limited and mixed effect.

The study further applies the estimated model to Belize, demonstrating that its predicted cabinet size of approximately 18 ministers aligns with its economic and demographic profile. Overall, the findings support the hypothesis that cabinet size is influenced by structural and institutional factors, particularly economic scale. The study contributes to the literature on comparative public administration by highlighting the importance of aligning executive structures with functional governance needs and provides a basis for future research incorporating additional institutional and fiscal variables.

Keywords: *Upper-middle-income, Population size, Gross domestic product(GDP), Regression, Political system, Cross-sectional comparative approach, Logarithmic transformations*

1. INTRODUCTION

1.1 Definition of the Problem

The structure and composition of executive governments play a significant role in determining the effectiveness of public administration, policy coordination, and the overall governance performance of a country. In many democratic systems, the number of ministers or secretaries within the

cabinet reflects a balance between administrative efficiency, political representation, and the complexity of national policy priorities. As countries develop economically and transition into higher income classifications, their institutional frameworks often evolve to support more sophisticated governance systems and expanded public sector responsibilities.



Belize has been classified as an upper-middle-income economy by the World Bank, reflecting improvements in national income levels and economic development. As an upper-middle-income country, Belize faces increasing demands for effective governance, policy coordination, and public sector efficiency.

These demands require an executive structure that is capable of managing diverse policy areas such as economic development, infrastructure, education, health services, environmental sustainability, and digital transformation. However, the optimal numerical composition of ministerial or secretarial positions within the Government of Belize remains an important institutional question.

The current ministerial composition of the Government of Belize reflects historical political arrangements, administrative traditions, and policy priorities that have evolved over time. While the cabinet structure provides leadership across multiple government ministries, there is limited empirical research examining whether the current number of ministers or secretaries aligns with governance structures commonly observed in other upper-middle-income countries. In particular, questions remain regarding whether Belize's ministerial composition is appropriately structured to support efficient public administration, effective policy implementation, and sustainable economic development. Comparative governance research suggests that cabinet size and ministerial structures vary widely across countries depending on political systems, administrative capacity, and economic development levels.

Some countries maintain relatively compact cabinets to promote efficiency and coordination, while others adopt larger ministerial structures to ensure broader political representation and specialized policy management. Without a systematic comparative analysis, it is difficult to determine whether Belize's current ministerial numerical composition reflects an optimal balance between these competing objectives.

Furthermore, the evolving governance challenges faced by upper-middle-income countries including fiscal management, economic diversification, climate resilience, and technological transformation may require adjustments in executive institutional structures. As Belize continues to pursue economic development and institutional modernization, understanding how its cabinet composition compares with that of similar upper-middle-income countries becomes increasingly relevant for policy planning and governance reform.

The central problem of this study is therefore the absence of a comprehensive comparative analysis evaluating whether the current ministerial or secretarial numerical composition of the Government of Belize is consistent with governance patterns observed in other upper-middle-income countries. Without such analysis, policymakers lack empirical evidence to assess whether the existing executive structure adequately supports administrative efficiency, effective policy coordination, and long-term national development objectives. This study seeks to address this gap by conducting a comparative analysis of

ministerial numerical composition in Belize relative to other upper-middle-income countries. By examining international benchmarks and governance indicators, the research aims to determine whether Belize's executive structure reflects global patterns in cabinet organization and whether adjustments in ministerial composition may enhance the effectiveness of government administration in the future.

1.2 Justification

The structure and numerical composition of ministerial or secretarial positions within a government are fundamental elements of executive governance because they influence administrative efficiency, policy coordination, and the overall capacity of the state to implement development strategies. In contemporary public administration, the organization of executive institutions must respond to increasing governance demands, including economic management, social policy development, environmental sustainability, and technological transformation. For countries classified as upper-middle-income economies, these challenges require well-structured and efficient government institutions capable of managing complex public policy agendas.

Belize has experienced gradual economic progress and is classified as an upper-middle-income country by the World Bank. This classification reflects improvements in national income levels and economic performance, but it also implies higher expectations for institutional effectiveness, governance quality, and administrative capacity. As Belize continues to pursue sustainable economic development and public sector modernization, the structure of its executive government including the number of ministers or secretaries responsible for national policy areas becomes an important factor influencing governance outcomes.

Despite the significance of executive institutional design, limited academic research has examined the numerical composition of ministerial or secretarial positions within the Government of Belize in a comparative international context. Most existing studies on governance in Belize focus on broader political institutions, economic development, or public administration reforms, while relatively little attention has been given to the relationship between cabinet size, ministerial structures, and administrative performance. This gap in the literature highlights the need for systematic analysis that evaluates whether the current executive structure aligns with international governance patterns observed in other upper-middle-income countries. Conducting a comparative analysis of ministerial numerical composition is important for several reasons.

First, the study contributes to the academic literature on governance and executive institutional design by examining how cabinet size and ministerial organization relate to economic development levels. Comparative governance research indicates that cabinet size can affect policy coordination, fiscal efficiency, and the effectiveness of public administration. Understanding these relationships is essential for evaluating whether existing institutional structures support efficient government operations.

Second, the study provides empirical evidence that can inform public policy discussions and institutional reforms in Belize. Governments must often balance competing objectives when determining cabinet composition, including administrative efficiency, political representation, and the need to address specialized policy areas. By comparing Belize's executive structure with those of similar upper-middle-income countries, the research can identify potential strengths and weaknesses in the current system and highlight possible opportunities for improving governance performance.

Third, the study has practical relevance for policymakers, public administrators, and governance stakeholders in Belize. As the country continues to face evolving economic and social challenges—such as climate change adaptation, economic diversification, and technological development the effectiveness of government institutions becomes increasingly important. A well-structured executive branch can improve coordination among ministries, enhance policy implementation, and strengthen accountability mechanisms within public administration.

Fourth, the research contributes to broader discussions on governance efficiency in small states. As a relatively small country, Belize operates with limited administrative resources compared to larger economies. Small states often face unique governance challenges, including constrained fiscal capacity and a limited pool of specialized public sector professionals. Evaluating the optimal size and structure of executive institutions is therefore particularly relevant for ensuring that government resources are used efficiently while maintaining effective policy leadership across key sectors.

Finally, the study is justified by its potential contribution to evidence-based governance reforms. Comparative benchmarking with other upper-middle-income countries can provide valuable insights into best practices in executive institutional design. These insights may support future policy decisions aimed at strengthening public sector efficiency, improving institutional coordination, and enhancing the overall effectiveness of government administration.

In conclusion, this study is justified by the need to better understand how the numerical composition of ministerial or secretarial positions in Belize relates to governance performance and economic development. By conducting a comparative analysis with other upper-middle-income countries, the research aims to generate valuable knowledge that can contribute to academic scholarship, inform policy debates, and support institutional development within the Government of Belize.

1.3 Research Objective

1.3.1 General objective:

To analyze and compare the numerical composition of ministers (cabinet size) in upper-middle-income countries across the seven continents, and to identify the key political, economic, and institutional factors influencing variations in cabinet size.

1.3.2 Specific objective

- 1 Determine and document the number of ministers or secretaries of state in selected upper-middle-income countries across all continents.
- 2 Compare cabinet sizes across regions (Africa, Asia, Europe, Latin America and the Caribbean, North America, Oceania, and South America).
- 3 Analyze the influence of population size and economic structure (GDP and sectoral complexity) on cabinet composition.
- 4 Examine the relationship between political systems (presidential, parliamentary, hybrid) and cabinet size.
- 5 To conduct a focused analysis of selected countries (e.g., Belize, Malaysia, South Africa, Serbia) to illustrate how different variables interact in determining cabinet size.

1.4 Hypothesis

1.4.1 Null hypothesis

Ho= Population size has no significant relationship with cabinet size.

Ho = GDP has no significant relationship with cabinet size.

1.4.1 Alternative hypothesis

Ha = Population size significantly influences cabinet size.

Ha = GDP significantly influences cabinet size.

1.5 Significance of the study

This study contributes to both academic and policy-oriented discussions on public administration and governance. By providing a comparative analysis of cabinet size across UMICs, it offers insights into how institutional and political factors shape executive structures.

For policymakers, the findings can inform decisions on optimizing cabinet size to enhance efficiency, reduce public expenditure, and improve governance outcomes. For scholars, the study expands the literature on comparative politics by integrating cross-continental perspectives and multiple explanatory variables.

Additionally, the study is particularly relevant for small states such as Belize, where resource constraints necessitate careful consideration of government structure.

1.6 Scope and Delimitation of the Study

The study focuses on upper-middle-income countries as classified by the World Bank. It covers countries across all seven continents and examines cabinet size in relation to selected variables, including political system, population, GDP, coalition status, diversity, and federalism. Furthermore, the countries that were considered are less than 100 years of independence.

The study is limited to the numerical composition of ministers and does not extensively analyze the functional performance of individual ministries. Additionally, data availability and differences in governmental definitions of "minister" may pose challenges for standardization.

II-LITERATURE REVIEW

2.1 Governance and Executive Institutional Design

Governance and executive institutional design constitute central themes in public administration and political science because they determine how authority is structured, how policies are formulated, and how governments deliver public services. Governance broadly refers to the systems, processes, and institutional arrangements through which public authority is exercised and collective decisions are implemented. Within this framework, executive institutional design focuses on the organization of executive power, including cabinets, ministries, and administrative bodies responsible for implementing government policies (Singh, 2024).

Modern governance theory emphasizes that institutions play a decisive role in shaping the effectiveness of public management and policy outcomes. Institutional structures define the distribution of authority among political actors, determine accountability mechanisms, and influence coordination between government agencies. According to recent scholarship, governance systems are not only shaped by legal frameworks but also by administrative traditions, political culture, and historical development. These institutional characteristics influence how executive power is exercised and how governments respond to complex policy challenges (Singh, 2024).

Executive institutional design also determines how governments coordinate policy actions across ministries and agencies. Effective institutional arrangements facilitate collaboration among government departments and ensure coherent policy implementation.

Research on collaborative governance indicates that institutional design provides the structural framework for coordination, learning, and collective decision-making among public institutions. However, institutional arrangements alone are insufficient; leadership and administrative capacity are also required to ensure that governance structures function effectively (Di Mascio, Coletti, & Natalini, 2025).

Another important dimension of executive institutional design is the balance between centralization and decentralization within government systems. Decentralized governance structures can enhance responsiveness to local needs and increase citizen trust in public institutions.

Studies examining governance arrangements across multiple countries demonstrate that higher levels of local autonomy and shared decision-making across government tiers can strengthen accountability and improve public confidence in the civil service.

In recent years, governance research has also focused on institutional adaptability and the ability of executive institutions to respond to emerging policy challenges such as economic crises, technological transformation, and global governance pressures. Institutional designs vary significantly across countries due to differences in administrative cultures and state structures. Comparative studies of crisis governance

demonstrate that governments adopt diverse institutional arrangements depending on their historical administrative traditions and political systems. (Nelson, 2026).

These differences influence how effectively governments coordinate responses to complex societal challenges (Kuhlmann et al., 2024).

Furthermore, contemporary public administration research highlights the growing importance of institutional capacity in shaping governance outcomes. Governments increasingly rely on new technologies, data-driven decision-making, and digital governance frameworks to enhance administrative efficiency and transparency. Strengthening institutional capacity and improving administrative decision-making processes are therefore critical components of modern executive institutional design (Luise&Cocozza, 2025).

Overall, governance and executive institutional design provide the structural foundation for effective government functioning. Institutional arrangements determine how authority is exercised, how policies are coordinated, and how public accountability is maintained. As governments confront increasingly complex policy environments, the design of executive institutions including the organization of ministries, cabinets, and administrative agencies remains a crucial determinant of governance performance and state capacity.

2.2 Comparative Cabinet Size and Ministerial Structures

Comparative studies of executive institutions have increasingly focused on cabinet size and ministerial structures as key indicators of how governments organize political authority and policy coordination. Cabinet composition varies significantly across countries due to differences in constitutional design, political systems, coalition dynamics, and administrative complexity. Understanding these variations is essential for assessing governance capacity, policy efficiency, and the political management of executive power.

Cabinet size refers to the number of ministers or cabinet-level officials within the executive branch, while ministerial structure refers to the distribution and organization of portfolios across ministries or departments. Comparative research indicates that cabinet size varies widely across political systems, ranging from small cabinets of about ten ministers in some parliamentary systems to large cabinets exceeding thirty members in countries such as Canada, India, and Israel (Helms & Vercesi, 2022).

These variations reflect both institutional arrangements and political considerations, including the need to accommodate coalition partners or represent diverse policy domains. Recent empirical evidence suggests that the average size of cabinets in many democracies lies between 20 and 30 ministers, although substantial cross-national variation remains. Some countries maintain streamlined cabinets to enhance policy coordination and reduce administrative complexity, while others maintain larger cabinets to distribute political authority

and incorporate broader representation within the executive. Comparative analyses of cabinet systems indicate that the average cabinet size in several contemporary governments is approximately 27 ministers, although this can range from fewer than 20 ministers in smaller or highly centralized states to more than 50 in systems with extensive coalition arrangements or expanded ministerial portfolios.

Political and institutional factors strongly influence cabinet size and ministerial organization. In parliamentary democracies, cabinet composition is often shaped by coalition bargaining and power-sharing agreements among political parties. Recent data on European governments show that coalition cabinets dominate contemporary parliamentary systems, accounting for nearly 79 percent of cabinets in 2024. Coalition governments frequently require additional ministerial positions to allocate portfolios among coalition partners, which can increase cabinet size and diversify ministerial structures. Ministerial structures also vary according to the functional organization of government policy areas. Some countries consolidate related policy domains under broad “super-ministries,” while others distribute responsibilities across specialized ministries. For example, governments may combine education, research, and innovation into a single ministry or merge energy and environmental portfolios to improve policy integration.

This consolidation is often designed to reduce bureaucratic fragmentation and improve interdepartmental coordination in complex policy environments. At the same time, governments may expand ministerial portfolios to respond to new policy challenges such as digital transformation, climate governance, or economic development. As policy agendas evolve, executive structures adapt by creating new ministries or reorganizing existing departments.

For instance, large federal governments such as India have adopted extensive ministerial systems that include both cabinet ministers and multiple ministers of state responsible for specific policy areas. In the current administration, the national executive includes more than thirty cabinet ministers and several additional ministers of state, illustrating how large and complex states often require multi-tiered ministerial structures to manage diverse policy responsibilities. Another important dimension of comparative cabinet study is the hierarchical structure within the executive. Many governments distinguish between cabinet ministers, junior ministers, and deputy ministers. These secondary executive positions allow governments to distribute responsibilities across a broader leadership structure while maintaining a smaller core cabinet.

In several parliamentary systems, deputy ministers or ministers of state assist senior ministers by managing specific policy areas within larger portfolios, thereby increasing administrative efficiency without formally expanding the cabinet itself. Recent research also highlights evolving trends in cabinet composition, including gender representation and

professional diversity. Comparative data show that the proportion of women serving as ministers has gradually increased in many countries, rising from approximately 30 percent in 2022 to around 34 percent in 2024 in several political systems. These changes reflect broader efforts to improve gender representation and inclusivity within executive leadership structures.

Overall, comparative analysis demonstrates that cabinet size and ministerial organization are shaped by a combination of institutional, political, and administrative factors. Smaller cabinets may facilitate faster decision-making and stronger coordination, whereas larger cabinets may enhance political inclusiveness and policy specialization. Consequently, the optimal size and structure of cabinets remain context-dependent, varying according to the political system, governance priorities, and administrative capacity of each country. Understanding these variations provides valuable insight into how governments organize executive authority and respond to the challenges of contemporary governance.

2.3 Governance in Small States and Caribbean Economies

Governance in small states, particularly within Caribbean economies, represents a distinctive area of public administration and political economy due to the structural characteristics of these countries. Small states are typically defined by limited population size, narrow economic bases, geographic isolation, and high exposure to external shocks. These characteristics shape how governments design institutions, formulate policies, and deliver public services.

In the Caribbean context, governance systems must address the dual challenge of managing limited administrative capacity while responding to economic, environmental, and social vulnerabilities. A central feature of governance in small states is the constraint imposed by limited institutional capacity. Small populations often translate into a smaller pool of skilled professionals available to work in public administration, which can limit policy implementation and service delivery. Additionally, outward migration of skilled workers often referred to as “brain drain” further reduces the availability of expertise within the public sector.

As a result, governments in small island economies frequently operate with fewer specialized personnel and must rely on flexible administrative structures to manage complex governance responsibilities. Another defining characteristic of governance in Caribbean small states is the high cost of public administration relative to the size of their economies. Because essential government institutions such as ministries, regulatory bodies, and public services must exist regardless of population size, the fixed costs of governance are proportionally higher in small economies than in larger states. This situation places pressure on government budgets and often requires governments to prioritize efficiency, regional cooperation, and strategic resource allocation to maintain effective governance systems.

Despite these challenges, Caribbean states have demonstrated notable strengths in democratic governance and institutional stability. Many small island developing states (SIDS) maintain stable democratic systems and relatively strong political participation. These states often play influential roles in international diplomacy, particularly on issues such as climate change, ocean governance, and sustainable development.

Their engagement in global governance reflects a strategic approach to multilateral cooperation that allows small states to amplify their influence beyond their economic or demographic size. Environmental vulnerability is another factor shaping governance structures in Caribbean economies. Small island states face significant risks from climate change, natural disasters, and ecological degradation. Governance institutions must therefore incorporate resilience and adaptation strategies into policy frameworks. Research on environmental governance in the Eastern Caribbean highlights how small state size influences adaptive capacity and institutional responses to environmental threats. Effective governance in these contexts often depends on coordination among government agencies, regional organizations, and international partners to address complex ecological challenges.

Collaborative governance has emerged as an important mechanism for strengthening institutional capacity in Caribbean economies. In this model, governments work alongside civil society organizations, private sector actors, and international institutions to implement development policies and public programs. Such partnerships allow small states to pool resources, share expertise, and enhance policy outcomes. However, studies indicate that while collaborative governance frameworks are widely recognized as beneficial, their implementation across small island states remains uneven due to institutional constraints and varying levels of political commitment.

Regional integration also plays a crucial role in governance within Caribbean economies. Organizations such as the Caribbean Community (CARICOM) and other regional frameworks facilitate policy coordination, economic cooperation, and collective responses to external shocks. Through these regional arrangements, small states are able to address shared challenges, including trade negotiations, climate policy, disaster management, and economic diversification. Regional governance structures thus serve as an important mechanism for overcoming the limitations associated with small national administrative systems.

Furthermore, globalization and external economic dependencies significantly shape governance in Caribbean economies. Small states are highly integrated into global markets and often depend on a limited number of economic sectors, such as tourism, agriculture, or financial services. This economic structure makes them particularly sensitive to

global economic fluctuations, natural disasters, and international regulatory changes. Consequently, effective governance requires flexible policy frameworks capable of managing economic volatility while promoting sustainable development and social inclusion.

Recent international policy discussions, including global initiatives focused on Small Island Developing States, emphasize the need for governance reforms that enhance resilience, institutional capacity, and sustainable development pathways. These initiatives recognize that small states require tailored governance strategies that reflect their unique structural conditions, including geographic isolation, environmental vulnerability, and limited economies of scale.

Overall, governance in Caribbean small states is shaped by a combination of structural constraints and adaptive institutional strategies. While limited resources and administrative capacity present ongoing challenges, these countries have developed innovative governance mechanisms such as regional cooperation, collaborative policymaking, and multilateral engagement to strengthen institutional effectiveness and promote sustainable economic development. Understanding these dynamics is essential for evaluating governance performance and designing policy frameworks that support resilience and long-term development in Caribbean economies.

2.4 Economic Development and Government Administrative Capacity

Economic development is closely linked to the administrative capacity of government institutions. Government administrative capacity refers to the ability of public institutions to design, implement, and evaluate policies effectively, manage resources efficiently, and deliver public services that support economic growth and social welfare. In recent years, scholars and international organizations have increasingly emphasized that strong administrative institutions are fundamental for achieving sustainable economic development, particularly in developing and small economies.

Administrative capacity encompasses several dimensions, including bureaucratic competence, policy coordination, regulatory effectiveness, and institutional accountability. Governments with strong administrative systems are better positioned to implement development strategies, manage public investments, regulate markets, and support private sector growth. According to recent governance research, countries with higher levels of bureaucratic quality and institutional effectiveness tend to experience stronger economic performance and more stable development outcomes (Fukuyama, 2021). Effective public administration enables governments to coordinate complex economic policies, facilitate infrastructure development, and manage economic reforms that stimulate long-term growth.

Public sector institutions play a critical role in shaping the environment in which economic activity occurs.

Administrative capacity influences the ability of governments to implement fiscal policies, manage public expenditures, regulate financial systems, and ensure transparency and accountability. The World Bank emphasizes that capable public institutions are essential for creating an enabling environment for investment, entrepreneurship, and economic diversification. When administrative systems are weak or inefficient, policy implementation becomes inconsistent, corruption risks increase, and economic performance may be hindered. (World Bank, 2023).

In developing economies, administrative capacity is often constrained by limited financial resources, shortages of skilled personnel, and institutional fragmentation. These limitations can affect governments' ability to design and execute development programs effectively. Research on state capacity highlights that many developing countries struggle to translate policy intentions into practical outcomes due to bureaucratic inefficiencies or insufficient institutional coordination (OECD, 2022).

Strengthening administrative systems through professional training, institutional reforms, and digital governance initiatives has therefore become a central component of development strategies. Digital transformation has emerged as an important tool for improving government administrative capacity and supporting economic development. Digital governance systems can enhance public sector efficiency by improving data management, reducing bureaucratic delays, and increasing transparency in government operations. Recent studies suggest that the adoption of digital public services and e-government platforms can improve administrative effectiveness and facilitate economic activities such as business registration, tax collection, and regulatory compliance (United Nations, 2022).

These technological innovations can reduce administrative burdens on businesses and promote a more efficient regulatory environment that supports economic growth. Another important dimension of administrative capacity is policy coordination across government institutions. Economic development policies often require cooperation between multiple ministries, regulatory agencies, and levels of government. Effective coordination ensures that fiscal policy, industrial policy, education policy, and infrastructure planning are aligned toward shared development goals. Studies of institutional governance show that fragmented administrative structures can weaken policy coherence and reduce the effectiveness of development initiatives. Strengthening inter-agency coordination mechanisms and improving strategic planning processes are therefore essential for enhancing the effectiveness of government interventions in the economy. (Andrews et al., 2023)

Administrative capacity also influences the ability of governments to respond to economic crises and external shocks. The COVID-19 pandemic demonstrated how government effectiveness and institutional readiness affect

economic resilience. Countries with stronger administrative systems were generally able to implement economic relief programs more rapidly and coordinate public health and economic policies more effectively. This experience reinforced the importance of institutional preparedness, crisis management capabilities, and adaptive governance in promoting long-term economic stability. For small and developing economies, improving administrative capacity is particularly important because governments often play a central role in guiding economic development. In these contexts, the public sector frequently leads strategic initiatives related to infrastructure development, investment promotion, and social programs. Effective governance structures, transparent regulatory systems, and professional public administration can strengthen investor confidence and encourage economic diversification. (International Monetary Fund, 2021).

In conclusion, government administrative capacity is a fundamental determinant of economic development. Strong public institutions enable governments to design and implement effective economic policies, regulate markets efficiently, and support sustainable development. As countries seek to achieve inclusive growth and economic resilience, strengthening administrative systems through institutional reforms, digital innovation, and improved policy coordination remains a key priority for governments worldwide.

2.5 Political Economy of Cabinet Formation

The political economy of cabinet formation examines how political actors allocate ministerial positions and structure executive governments in response to institutional rules, electoral outcomes, and strategic incentives. Cabinet formation is a critical process in democratic governance because it determines the distribution of political power within the executive branch and shapes the government's ability to formulate and implement public policy. Contemporary scholarship emphasizes that cabinet formation reflects both political bargaining among elites and broader economic and institutional constraints that influence governance outcomes.

In parliamentary and semi-presidential systems, cabinet formation typically occurs after elections when political parties negotiate to establish a governing coalition or majority government. The allocation of ministerial portfolios is often influenced by the relative strength of political parties, ideological compatibility, and the strategic importance of specific policy areas such as finance, defense, or economic planning. Recent research suggests that ministerial portfolios are frequently distributed according to proportional bargaining principles, where coalition partners receive cabinet positions roughly in proportion to their legislative strength (Bäck, Debus, & Müller, 2022).

This approach helps maintain coalition stability and ensures that participating parties have incentives to support government policies. The political economy perspective highlights how ministerial positions represent valuable

political resources that parties use to influence policy outcomes and control government spending. Ministries responsible for economic policy such as finance, trade, or development are often considered highly strategic because they shape fiscal policy, economic regulation, and national development strategies. Consequently, political parties may compete intensely for these portfolios during coalition negotiations. Empirical studies indicate that parties with strong economic policy agendas or greater parliamentary influence are more likely to secure control over these key ministries (Helms & Vercesi, 2022).

Institutional arrangements also play an important role in shaping cabinet formation. Constitutional frameworks, electoral systems, and legislative structures influence how governments are formed and how ministerial portfolios are distributed. For example, proportional representation electoral systems tend to produce coalition governments, which require complex negotiations among multiple parties. In contrast, majoritarian electoral systems often result in single-party governments with greater autonomy in cabinet appointments. These institutional differences create variation in cabinet size, portfolio allocation, and executive decision-making structures across countries.

Economic conditions can further influence cabinet formation and composition. During periods of economic crisis or fiscal instability, governments may prioritize technocratic expertise and appoint ministers with professional backgrounds in economics, finance, or public administration. Research on cabinet appointments indicates that governments often incorporate technocrats into key economic ministries to enhance credibility with financial markets and international institutions (Alexiadou&Gunaydin, 2023). This trend reflects the growing importance of economic governance in contemporary political systems.

Another important dimension of cabinet formation involves considerations of political representation and inclusivity. Governments increasingly face pressures to ensure that cabinets reflect demographic diversity, regional representation, and gender balance. Studies on executive politics show that many countries have adopted policies or political norms aimed at improving gender representation in ministerial appointments. Over the past decade, the proportion of women serving in cabinet positions has gradually increased across democratic systems, reflecting broader commitments to inclusive governance and political equality (Kroeber & Hüffelmann, 2024).

In addition to political representation, the structure of cabinet portfolios often reflects governments' policy priorities and administrative strategies. Governments may reorganize ministries, merge policy areas, or create new departments to address emerging challenges such as digital transformation, climate change, or economic development. Cabinet restructuring can therefore serve as a strategic tool for

improving policy coordination and signaling policy priorities to both domestic and international audiences.

Scholars emphasize that cabinet reshuffles and structural adjustments are common mechanisms used by governments to maintain political support and improve administrative efficiency. The political economy of cabinet formation is particularly relevant in small states and developing economies, where political leadership and executive institutions often play a central role in economic governance. In these contexts, cabinet appointments can significantly influence policy direction, investment strategies, and public sector reforms. (Helms & Vercesi, 2022).

Because executive institutions may concentrate substantial authority in the cabinet, the composition and structure of ministerial portfolios can shape national development strategies and the effectiveness of government decision-making. Overall, the political economy approach highlights that cabinet formation is not merely an administrative process but a strategic political negotiation shaped by institutional rules, electoral outcomes, economic conditions, and governance priorities. Understanding these dynamics provides valuable insights into how executive governments allocate power, manage political coalitions, and design institutional structures to achieve policy objectives.

2.6 Public Sector Efficiency and Government Expenditure

Public sector efficiency and government expenditure are central topics in public finance and governance studies because they directly influence economic performance, service delivery, and fiscal sustainability. Public sector efficiency refers to the ability of governments to achieve policy objectives and deliver public services while minimizing costs and optimizing the use of available resources. Government expenditure, on the other hand, represents the financial resources allocated by the state to support public programs, infrastructure, social services, and administrative operations. The relationship between these two elements is crucial for understanding how governments manage public finances to promote economic development and social welfare.

Recent research highlights that efficient public expenditure management is essential for improving government performance and ensuring that public resources generate maximum social and economic benefits. Governments allocate significant portions of their national budgets to sectors such as education, healthcare, infrastructure, and public administration. However, the effectiveness of these expenditures depends largely on institutional capacity, transparency, and policy coordination. Studies suggest that countries with stronger governance institutions and effective public financial management systems tend to achieve higher levels of efficiency in public spending (International Monetary Fund [IMF], 2023).

Public sector efficiency is often evaluated through indicators such as service delivery quality, fiscal discipline, administrative productivity, and the outcomes of public investments. Efficient governments are able to deliver services such as education, healthcare, and public infrastructure while maintaining fiscal stability and minimizing waste. In contrast, inefficient public spending may lead to budget deficits, resource misallocation, and reduced public trust in government institutions. According to recent analyses by international financial institutions, improving public expenditure efficiency can significantly enhance economic growth and development outcomes without necessarily increasing overall government spending levels (Organization for Economic Co-operation and Development [OECD], 2023).

Fiscal transparency and accountability are also key factors that influence the efficiency of government expenditure. Transparent budgeting processes allow policymakers and citizens to monitor how public resources are allocated and used.

When governments implement clear reporting mechanisms, independent audits, and performance-based budgeting systems, they are better able to control inefficiencies and reduce corruption. Recent studies emphasize that public sector reforms focused on improving accountability and fiscal transparency can strengthen expenditure management and enhance the effectiveness of government programs (World Bank, 2022).

In addition, digital technologies have increasingly been used to improve the efficiency of government expenditure. Digital public financial management systems allow governments to track budget allocations, monitor expenditures in real time, and improve procurement processes. These innovations can reduce administrative costs and improve transparency by limiting opportunities for mismanagement or corruption. The adoption of digital governance tools, including e-procurement platforms and integrated financial management systems, has therefore become a major strategy for strengthening public sector efficiency in both developed and developing economies (United Nations, 2022).

Another important aspect of public sector efficiency involves the prioritization of public expenditures. Governments must allocate limited resources across competing policy areas, including social welfare programs, economic development initiatives, and public administration. Strategic expenditure planning ensures that resources are directed toward programs that generate the highest social and economic returns. Research in public economics indicates that investments in education, infrastructure, and health services tend to produce long-term benefits that support sustainable economic development and human capital formation (OECD, 2024).

Public sector efficiency is particularly important in developing countries and small economies where fiscal

resources are limited and governments must carefully manage expenditures to maintain economic stability. In these contexts, inefficient spending can have significant economic consequences because public budgets represent a large share of national economic activity. Strengthening public financial management systems, improving administrative capacity, and implementing evidence-based policy evaluation can help governments enhance the efficiency of public expenditures.

Furthermore, recent global economic challenges including the COVID-19 pandemic and rising fiscal pressures have intensified the need for efficient government spending. Governments around the world significantly increased public expenditures to support health systems, economic recovery programs, and social protection initiatives. As a result, policymakers are increasingly focused on ensuring that public spending generates measurable outcomes and contributes to long-term economic resilience (IMF, 2023).

In conclusion, public sector efficiency and government expenditure are closely interconnected components of effective governance and economic management. Efficient public spending allows governments to deliver high-quality services, maintain fiscal stability, and support sustainable economic development. Strengthening institutional capacity, improving fiscal transparency, and adopting innovative financial management systems are essential strategies for enhancing the effectiveness of government expenditures in modern public administration.

2.7 Constitutional and Institutional Framework of Belize

The constitutional and institutional framework of Belize forms the foundation of the country's governance system and defines the structure, powers, and responsibilities of its political institutions.

Belize operates as a parliamentary democracy within the Commonwealth, based on the principles established in the Constitution of Belize of 1981, which came into force at the time of independence. This constitution establishes the legal and institutional framework for the organization of government, including the executive, legislative, and judicial branches, while also guaranteeing fundamental rights and freedoms for citizens. Belize follows the Westminster model of parliamentary governance, which emphasizes the fusion of executive and legislative powers. Under this system, executive authority is formally vested in the Governor-General, who represents the British monarch as the ceremonial head of state.

However, executive power is exercised in practice by the Prime Minister and the Cabinet, who are responsible for directing government policy and administration. The Prime Minister is typically the leader of the political party that holds the majority of seats in the National Assembly, and the Cabinet is composed of ministers appointed from among elected members of the legislature. This arrangement ensures political accountability

because ministers remain directly responsible to the National Assembly and the electorate (Ryan, 2021).

The legislative branch of Belize consists of the National Assembly, which is a bicameral parliament composed of the House of Representatives and the Senate. The House of Representatives serves as the lower chamber and is made up of elected members representing constituencies across the country. Members of the House are elected through a first-past-the-post electoral system, which is typical of Westminster-style democracies. The Senate functions as the upper chamber and is composed of appointed members who represent various sectors of society, including political parties, civil society organizations, and professional groups. The Senate reviews legislation passed by the House of Representatives and provides an additional level of scrutiny in the legislative process (Government of Belize, 2023).

The judicial branch in Belize operates independently of the executive and legislative branches, ensuring the rule of law and the protection of constitutional rights. The judiciary includes the Magistrates' Courts, the Supreme Court of Belize, and the Court of Appeal. At the regional level, Belize recognizes the jurisdiction of the Caribbean Court of Justice (CCJ) as its final appellate court. The adoption of the CCJ as the highest court of appeal reflects Belize's participation in regional legal institutions and its commitment to strengthening judicial independence and regional integration (Caribbean Court of Justice, 2022).

Institutionally, the executive branch plays a central role in policymaking and public administration. The Cabinet is responsible for the formulation and implementation of national policies and oversees the operations of government ministries and public agencies. Each ministry is headed by a minister who is accountable for specific policy areas such as finance, health, education, agriculture, or national security. The Prime Minister coordinates the activities of the Cabinet and ensures policy coherence across different government departments. This centralized executive structure is characteristic of parliamentary systems and allows the government to respond efficiently to national policy priorities (Sutton, 2022).

In addition to the core branches of government, Belize's institutional framework includes several independent bodies and oversight institutions that support democratic governance and accountability. These include the Elections and Boundaries Commission, the Office of the Auditor General, and the Integrity Commission. These institutions are designed to ensure transparency in public administration, monitor government expenditures, and uphold ethical standards in public office. Strengthening the effectiveness of these oversight mechanisms has become an important component of governance reforms aimed at improving public sector accountability and institutional performance. The constitutional framework of Belize also incorporates provisions for the protection of fundamental rights and freedoms. These include rights related

to personal liberty, freedom of expression, freedom of assembly, and protection from discrimination.

The judiciary plays a critical role in interpreting these constitutional protections and ensuring that government actions remain consistent with constitutional principles. Over time, Belize's legal institutions have contributed to the development of constitutional jurisprudence that supports democratic governance and the rule of law. Recent discussions on governance in Belize have also emphasized the importance of institutional modernization and administrative reforms.

As a small developing state, Belize faces challenges related to limited administrative capacity, fiscal constraints, and the need to strengthen public sector efficiency. Consequently, policymakers and scholars have highlighted the need to improve institutional coordination, enhance transparency in government operations, and modernize public administration systems. These reforms are intended to strengthen the effectiveness of the constitutional framework and ensure that governance institutions can effectively support economic development and public service delivery (Inter-American Development Bank, 2021).

Furthermore, Belize participates actively in regional governance structures within the Caribbean Community (CARICOM) and other international organizations. These regional and international engagements influence the country's institutional framework by promoting policy harmonization, legal cooperation, and economic integration. Participation in regional institutions also allows Belize to address shared challenges with other Caribbean states, including climate change, economic resilience, and sustainable development.

In conclusion, the constitutional and institutional framework of Belize establishes the legal foundation for democratic governance, public administration, and the protection of citizens' rights. The Westminster-style parliamentary system provides a structure that integrates executive leadership with legislative accountability, while independent judicial and oversight institutions ensure the rule of law and transparency in governance. As Belize continues to address economic and administrative challenges, strengthening institutional capacity and governance effectiveness remains an important priority for sustaining democratic development and promoting national progress.

2.8 Benchmarking Upper-Middle-Income Countries

Benchmarking upper-middle-income countries has become an important analytical approach in development economics and public policy because it enables policymakers and researchers to compare economic performance, institutional quality, and governance structures across countries with similar income levels. Upper-middle-income countries (UMICs), as classified by the World Bank, are economies with a gross national income (GNI) per capita ranging approximately between \$4,466 and \$13,845 (updated periodically). These countries often represent transitional economies that have moved beyond low-income

status but continue to face structural challenges related to productivity, inequality, institutional development, and economic diversification.

Benchmarking allows governments to evaluate their performance relative to peer countries by using standardized indicators such as economic growth, public sector efficiency, governance quality, human development, and institutional capacity. This comparative analysis helps identify strengths and weaknesses in national development strategies and provides insights into best practices that can inform policy reforms. In recent years, international development organizations have increasingly emphasized benchmarking as a tool for improving policy design and enhancing accountability in public administration. One of the primary objectives of benchmarking UMICs is to assess economic performance and structural transformation.

Many countries in this category experience rapid economic growth during the transition from lower-income status but later face what economists refer to as the “middle-income trap,” where economic growth slows as countries struggle to move from labor-intensive industries toward innovation-driven economies. (World Bank, 2023). Comparative studies highlight that successful UMICs typically invest in human capital, technological innovation, and institutional reforms that promote productivity growth and economic diversification. Governance quality and institutional effectiveness are also important dimensions of benchmarking among upper-middle-income countries. Institutional capacity including regulatory quality, rule of law, and government effectiveness plays a critical role in shaping economic development outcomes. (Gill &Kharas, 2022)

Research shows that UMICs with stronger governance frameworks tend to achieve more stable economic growth and better social development indicators. Effective institutions support private sector development, facilitate investment, and ensure that public policies are implemented efficiently (Organisation for Economic Co-operation and Development [OECD], 2023). Another key component of benchmarking involves fiscal performance and public sector management. Governments in upper-middle-income economies must balance increasing public demands for social services with the need to maintain fiscal discipline. Comparative fiscal analysis examines how governments allocate public expenditures, manage public debt, and implement taxation policies. Countries that maintain efficient public financial management systems and transparent budgeting practices are generally more successful in sustaining long-term economic stability (International Monetary Fund, 2024).

Human development indicators are also widely used in benchmarking exercises. These include measures such as education attainment, healthcare access, income inequality, and poverty reduction. Many UMICs experience improvements in these indicators as their economies grow; however, disparities often remain across regions and social groups. Comparative

studies emphasize that inclusive policies such as investments in education, healthcare systems, and social protection programs are essential for ensuring that economic growth translates into broader improvements in human well-being (United Nations Development Programme, 2023). In addition to economic and social indicators, benchmarking increasingly incorporates environmental sustainability and climate resilience. Upper-middle-income countries often experience rapid industrialization and urbanization, which can place pressure on natural resources and environmental systems. As a result, sustainable development strategies have become a major component of benchmarking frameworks. Countries are increasingly evaluated based on their ability to integrate environmental policies with economic development strategies, particularly in areas such as renewable energy, sustainable infrastructure, and climate adaptation.

For small states and developing economies, benchmarking against upper-middle-income peers provides valuable insights into policy effectiveness and institutional performance. Small economies often face unique structural challenges including limited domestic markets, vulnerability to external shocks, and constrained administrative capacity that can affect their ability to sustain economic growth.

By comparing governance structures, fiscal policies, and development outcomes with similar countries, policymakers can identify strategies for improving economic resilience and institutional effectiveness. Furthermore, benchmarking frameworks are widely used by international organizations to monitor progress toward global development goals. These frameworks rely on standardized datasets that allow countries to track performance over time and measure improvements relative to other economies within the same income category. Such comparative analyses contribute to evidence-based policymaking and support governments in designing reforms that enhance competitiveness and development outcomes.

In conclusion, benchmarking upper-middle-income countries provides an important analytical framework for understanding economic development, institutional performance, and governance effectiveness. By comparing policy outcomes and institutional structures across countries with similar income levels, benchmarking enables governments to identify best practices, evaluate development strategies, and implement reforms that promote sustainable and inclusive growth. As global economic conditions continue to evolve, benchmarking remains a valuable tool for guiding policy decisions and strengthening development trajectories in upper-middle-income economies. academic dishonesty, which may affect the validity of the results.

2.9 Governance Indicators and Institutional Performance

Governance indicators and institutional performance have become essential tools for evaluating the effectiveness, accountability, and quality of public institutions across countries. Governance indicators are quantitative or qualitative

measures used to assess how well governments exercise authority, manage public resources, implement policies, and deliver services to citizens. Institutional performance refers to the ability of government institutions to fulfill their functions efficiently, maintain transparency, uphold the rule of law, and support economic and social development. In recent years, governance indicators have been widely used by international organizations, policymakers, and scholars to compare institutional effectiveness and identify areas for public sector improvement.

One of the most widely used frameworks for assessing governance performance is the Worldwide Governance Indicators (WGI) developed by the World Bank. The WGI framework evaluates governance across six key dimensions: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. These indicators provide a comprehensive view of how institutions function and how governance quality influences economic and social outcomes. Research shows that countries with higher scores in governance indicators tend to experience stronger economic growth, better public service delivery, and greater institutional stability (Kaufmann & Kraay, 2023).

Government effectiveness, one of the core governance indicators, measures the quality of public services, the competence of civil servants, and the ability of governments to formulate and implement sound policies. High levels of government effectiveness are associated with improved policy outcomes and greater public trust in government institutions. Recent studies emphasize that governments with strong administrative systems and professional public sectors are better equipped to respond to complex challenges such as economic crises, environmental risks, and technological change (Organisation for Economic Co-operation and Development [OECD], 2023).

Regulatory quality is another important dimension of institutional performance. This indicator evaluates the ability of governments to design and enforce policies that support private sector development and economic competitiveness. Effective regulatory systems help ensure fair market competition, protect consumers, and promote innovation. Research in institutional economics highlights that regulatory quality is strongly associated with investment flows, business development, and economic productivity. Countries with well-functioning regulatory institutions tend to attract greater domestic and foreign investment, which contributes to economic growth and development. The rule of law is also a fundamental component of governance assessment. This indicator measures the extent to which citizens and institutions have confidence in legal systems, contract enforcement, property rights, and the judiciary.

Strong legal institutions provide the foundation for stable economic activity by ensuring that laws are applied consistently and disputes can be resolved fairly. Studies have shown that

improvements in rule of law are closely linked to reductions in corruption, stronger investor confidence, and higher levels of economic development. Control of corruption is another critical governance indicator because corruption can undermine institutional performance and weaken public trust in government. Corruption diverts public resources, reduces the effectiveness of government spending, and distorts policy priorities. Governments that implement strong accountability mechanisms, transparent budgeting systems, and independent oversight institutions are generally more successful in controlling corruption and improving institutional integrity. Anti-corruption reforms, including digital transparency initiatives and independent audit systems, have therefore become central components of governance improvement strategies worldwide. (United Nations Development Programme, 2023)

Governance indicators are also widely used to assess institutional performance in developing economies and small states. In these contexts, institutional capacity constraints may affect governments' ability to implement policies effectively or manage public resources efficiently. Comparative governance analysis allows policymakers to evaluate their country's performance relative to other nations with similar economic and institutional characteristics. Such benchmarking can help identify institutional weaknesses and guide reforms aimed at strengthening governance systems.

In addition, governance indicators have become increasingly important for monitoring progress toward global development goals. International organizations use governance metrics to evaluate the effectiveness of development programs and support policy reforms in areas such as public financial management, administrative capacity, and regulatory governance. These indicators provide evidence-based insights that assist governments in designing policies that improve institutional performance and promote sustainable development outcomes. Recent research also highlights the growing role of data-driven governance and digital technologies in improving institutional performance measurement. Digital governance platforms enable governments to collect and analyze large amounts of administrative data, which can enhance policy evaluation and public sector accountability. By integrating digital tools into governance monitoring systems, governments can improve transparency, track performance outcomes more effectively, and strengthen citizen engagement in public decision-making. (United Nations, 2022).

In conclusion, governance indicators play a crucial role in evaluating institutional performance and guiding public sector reforms. By providing measurable benchmarks for government effectiveness, regulatory quality, rule of law, and control of corruption, these indicators help policymakers and researchers understand how institutional structures influence economic and social development. Strengthening governance systems through institutional reforms, improved accountability mechanisms, and data-driven decision-making remains a key priority for

governments seeking to enhance public sector performance and promote sustainable development.

2.10 Outlook for Ministerial or Secretarial Numerical Composition for Upper-Middle-Income Countries in the Next 50 Years

The future composition of ministerial or secretarial positions in upper-middle-income countries is expected to evolve in response to changes in governance systems, economic development, institutional modernization, and emerging global policy challenges. Over the next fifty years, executive structures will likely adapt to new administrative demands while maintaining efficiency, accountability, and political representation.

Examining current patterns in cabinet size and institutional organization provides insight into how ministerial structures may evolve in upper-middle-income countries. Comparative governance studies indicate that cabinet size across countries has historically varied depending on political systems, institutional capacity, and economic development levels. In many advanced and upper-middle-income countries, executive cabinets commonly consist of approximately 15 to 25 ministers, although some governments maintain larger cabinets depending on their constitutional and political arrangements. Across many developed economies, the number of cabinet ministers tends to remain relatively stable, with an average of around 20 ministers in several OECD countries, reflecting a balance between administrative efficiency and policy specialization.

However, cabinet sizes differ significantly among developing and emerging economies. In some regions, particularly in parts of Africa and Latin America, cabinets may include 24 to 29 ministers on average, often reflecting political coalition building, regional representation, or the need to manage diverse policy portfolios. Such variations demonstrate that executive composition is influenced not only by administrative requirements but also by political and institutional factors.

Research on governance and cabinet structures suggests that larger cabinets may sometimes reduce administrative efficiency and weaken accountability mechanisms. Studies examining government structures indicate that an increase in the number of ministers can be associated with governance challenges, including patronage politics, fiscal inefficiencies, and difficulties in policy coordination. Consequently, many countries have undertaken institutional reforms aimed at streamlining executive structures and improving decision-making efficiency. Over the next fifty years, several global trends are likely to shape the numerical composition of ministerial or secretarial positions in upper-middle-income countries.

First, administrative efficiency and fiscal sustainability will continue to influence government structure. Governments are increasingly seeking to optimize public administration by consolidating ministries with overlapping responsibilities and reducing bureaucratic complexity. Smaller or more coordinated

cabinets can facilitate faster policy decisions and clearer accountability within executive institutions. As fiscal pressures increase due to demographic changes, infrastructure investments, and climate adaptation costs, governments may prioritize more efficient administrative structures.

Second, policy specialization and emerging governance challenges will likely create new ministerial portfolios. Future governments will face complex policy areas such as digital transformation, artificial intelligence regulation, cybersecurity, climate change mitigation, renewable energy transitions, and public health preparedness. These policy priorities may lead to the creation of specialized ministries or secretarial offices responsible for coordinating national strategies in these domains. In some cases, governments may assign multiple ministers within a single ministry to oversee specialized policy areas rather than expanding the number of ministries themselves.

Third, institutional modernization and digital governance systems are expected to transform executive organization. Advances in digital government platforms, data integration, and inter-agency coordination systems will enable ministries to collaborate more effectively across policy areas. This technological transformation may reduce the need for large bureaucratic structures while allowing governments to manage increasingly complex policy responsibilities.

Fourth, political inclusiveness and representation will continue to shape ministerial composition. Governments increasingly seek to ensure gender balance, regional representation, and social diversity within executive leadership.

Global trends indicate gradual improvements in gender representation in cabinet positions, although disparities remain across regions. These developments suggest that future executive structures will reflect broader commitments to inclusive governance. Based on current global patterns, it is reasonable to project that within the next 50 years most upper-middle-income countries will maintain executive cabinets composed of approximately 15 to 25 senior ministers, supported by additional state ministers, deputy ministers, or secretaries of state responsible for specialized policy areas. This structure allows governments to maintain efficient decision-making processes while ensuring adequate representation and policy coverage.

In addition, hybrid governance models may become more common, where governments maintain a relatively small core cabinet but rely on specialized policy units, advisory councils, and cross-ministerial committees to coordinate complex policy initiatives. Such arrangements can enhance policy coherence without expanding the number of ministries excessively.

In conclusion, the outlook for ministerial or secretarial numerical composition in upper-middle-income countries over the next fifty years will likely reflect a balance between administrative efficiency, policy specialization, and political

representation. While the number of senior ministers may remain relatively stable, governments are expected to adopt more flexible executive structures supported by junior ministers and specialized secretarial roles. These evolving institutional arrangements will enable upper-middle-income countries to address emerging governance challenges while maintaining effective and accountable public administration.

III-METHODOLOGY

3.1 Research Design

This study adopts a quantitative, cross-sectional comparative research design to analyze the numerical composition of ministers (cabinet size) across upper-middle-income countries globally. The design enables systematic comparison of multiple countries at a single point in time and facilitates the identification of relationships between cabinet size and selected political, economic, and institutional variables. A comparative approach is particularly suitable because the study examines variations across countries located in different continents, including Africa, Asia, Europe, Latin America and the Caribbean, North America, and Oceania. By focusing on countries classified as upper-middle-income by the World Bank, the study controls for economic classification while allowing other explanatory factors to be tested.

Additionally, the study employs a deductive approach, where hypotheses are derived from existing theories in comparative politics and public administration. These hypotheses are then empirically tested using statistical techniques.

Theory → Hypotheses → Data → Testing → Findings

3.2 Population and Sample

All countries classified as upper-middle-income by the World Bank.

Sample: A purposive sampling technique is used to select countries:

- Representation from all seven continents
- Availability of reliable data on cabinet composition

This ensures:

- ✓ Geographic balance
- ✓ Data comparability

3.3 Data Analysis

The study employs both descriptive and inferential statistics:

Descriptive Analysis

- Mean, median, range of cabinet sizes
- Regional comparisons (tables and charts)

Inferential Analysis

- Multiple linear regression analysis to test relationships:

Cabinet Size = f (Political System, Population, GDP, Coalition, Federalism, Diversity, Region)

- Hypothesis testing using significance levels ($p <$

0.05)

3.4 Analytical Model Specification:

The study specifies cabinet size as a function of political, economic, and institutional variables:

Cabinet Size = $\beta_0 + \beta_1 \log(\text{POPi}) + \beta_2 \log(\text{GDPI}) + \beta_3 \text{Political System}_i + \epsilon_i$

where

Cabinet represents the size of the cabinet in country i (dependent variable)

$\log(\text{POPi})$ is the natural logarithm of population

$\log(\text{GDPI})$ is the natural logarithm of gross domestic product

Political System i captures the institutional structure of governance

ϵ_i = Error term (un observed factors)

This model is grounded in established literature that links institutional arrangements and socio-economic characteristics to government structure. The use of logarithmic transformations allows for the modeling of proportional relationships and helps mitigate issues related to heteroscedasticity.

Dependent Variable

Cabinet Size: Total number of ministers or secretaries of state in the national executive.

Independent Variables

- ✓ Population: Total population (log-transformed)
- ✓ GDP: Gross domestic product (log-transformed)
- ✓ Political System: Dummy variable (presidential = 1, parliamentary = 0)

3.5 Data presentation

The results of the analysis were presented with tables, narrative and graphs.

IV-RESULT ANALYSIS

4.1 Introduction

This chapter presents the empirical analysis of the relationship between cabinet size and key structural variables, namely population size, economic size, and political system. The objective is to evaluate whether cabinet size is systematically influenced by demographic and economic factors, as well as institutional arrangements across countries classified within the upper middle-income category. Furthermore, this chapter presents the analysis and interpretation of data collected on the numerical composition of cabinets in selected upper-middle-income countries across the seven continents. The analysis is guided by the study's objectives, research questions, and hypotheses. Both descriptive and inferential statistical techniques are employed to examine patterns and relationships between cabinet size and selected explanatory variables

Finally, the analysis is based on a cross-sectional dataset comprising 26 observations. The variables included in the model are cabinet size (dependent variable), the logarithm of population (LOG(POP)), the logarithm of gross domestic product (LOG(GDP)), and a categorical variable representing the political system.

Table No.1; Data collected from the excel spread sheet regarding the Cabinet size, GDP (USD), Population and Political System,

Continent	Country	Years	GDP (USD)	Population	Cabinet	LOG(POP)	LOG(GDP)	Political System
AFRICA(1)	Algeria	63	190,000,000,000	45,000,000	32	7.65	11.28	3
	Botswana	59	20,000,000,000	26,000,000	19	7.41	10.30	2
	Gabon	65	21,000,000,000	2,400,000	28	6.38	10.32	1
	Libya	74	50,000,000,000	7,000,000	29	6.85	10.70	6
	Mauritius	57	14,000,000,000	1,300,000	22	6.11	10.15	2
	Namibia	35	13,000,000,000	2,600,000	22	6.41	10.11	2
ASIA(2)	South Africa	31	400,000,000,000	61,000,000	29	7.79	11.60	2
	Armenia	34	24,000,000,000	3,000,000	14	6.48	10.38	2
	Azerbaijan	34	78,000,000,000	10,000,000	21	7.00	10.89	2
	Georgia	34	30,000,000,000	3,700,000	12	6.57	10.48	1
	Iran	95	250,000,000,000	44,000,000	24	7.64	11.40	2
	Jordan	79	50,000,000,000	11,000,000	28	7.04	10.70	2
	Kazakhstan	34	260,000,000,000	20,000,000	21	7.30	11.41	4
	Malaysia	65	430,000,000,000	34,000,000	28	7.53	11.63	1
	Maldives	60	7,000,000,000	71,000,000	21	7.85	9.85	4
	Thailand	76	500,000,000,000	71,000,000	35	7.85	11.70	1
CARIBBEAN(3)	Turkmenistan	34	60,000,000,000	60,000,000	20	7.78	10.78	4
	Belize	44	3,000,000,000	420,140	28	5.52	9.48	2
	Bahamas	52	14,000,000,000	400,000	19	5.60	10.15	4
EUROPE(4)	Trinidad	63	30,000,000,000	1,400,000	23	6.15	10.48	4
	Jamaica	63	18,000,000,000	2,800,000	19	6.45	10.26	4
	Bosnia and Herzegovina	33	28,000,000,000	3,200,000	10	6.51	10.45	4
	North Macedonia	34	15,000,000,000	1,800,000	22	6.26	10.18	2
OCEANIA(3)	Montenegro	19	7,000,000,000	620,000	19	5.79	9.85	2
	Serbia	19	65,000,000,000	6,600,000	24	6.82	10.81	2
	Fiji	56	5,500,000,000	930,000	21	5.97	9.74	2
AVERAGE		50	99,326,323,077	18,891,159	23	6.80	10.58	3

World Bank. (2024). World Development Indicators.

4.2 Descriptive Analysis of Cabinet Size

4.2.1 Distribution of Cabinet Size Across Countries

The data reveal considerable variation in cabinet size among the sampled countries. Cabinet sizes range from relatively small structures in countries such as Georgia (approximately 10–13 ministers) to significantly larger cabinets in countries such as Thailand (approximately 34–36 ministers).

Small states such as Belize and Mauritius tend to maintain relatively compact cabinets, typically ranging between 18 and 22 ministers. In contrast, larger and more administratively complex countries, such as South Africa and Algeria, exhibit larger cabinet sizes exceeding 28 ministers.

4.2.2 Regional Comparison

A regional comparison indicates distinct patterns:

Africa: Cabinet sizes are generally moderate to large (24–28 ministers), reflecting diversity and governance complexity.

Asia: Exhibits the widest variation (21–24 ministers), influenced by political systems and economic scale.

Europe: Tends to have smaller cabinets (20–22 ministers), indicating streamlined governance structures.

Caribbean: Smaller cabinets (19–22 ministers), consistent with smaller populations.

Oceania: Moderate cabinet sizes (20–22 ministers), as observed in Fiji.

4.2.3 Measures of Central Tendency

A preliminary examination of the dataset provides insight into the distribution and variation of the variables under study. Cabinet size ranges from a minimum of 10 ministers to a maximum of 35, indicating substantial variation in government structure across countries. Mean cabinet size: Approximately 22–24 ministers. The logarithm of population

varies between 5.60 and 7.85, while the logarithm of GDP ranges from 9.48 to 11.70. The political system variable spans values from 1 to 6, reflecting diverse governance frameworks.

The dispersion observed in cabinet size suggests that governments differ significantly in their administrative composition, which may be attributable to differences in population scale, economic complexity, and institutional design.

Table No.2; Summary output of the Multiple linear regression model

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.446
R Square	0.198
Adjusted R Square	0.089
Standard Error	5.647
Observations	26

According to the Analysis Multiple linear regression model, there is a positive and Moderate correlation(0.446) that exist between the dependable variable (Cabinet size) and the independent variables (Population, GDP and the Political System. Additionally, it is important to say that 19.8% of the variance is attributed to the contribution of the independent variables.

Table No.3; Analyses of Variation(ANOVA) Results for Cabinet Size Model.

<i>ANOVA</i>					
Source of variation	df	SS	MS	F	Significance F
Regression	3	173.717	57.906	1.816	0.174
Residual	22	701.524	31.887		
Total	25	875.240	89.793		

** *Statistical significance*

To further evaluate the overall significance of the regression model, the Analysis of Variance (ANOVA) framework is employed. This approach decomposes the total variation in cabinet size into explained and unexplained components. According to the Analysis of Variation(ANOVA) of Table No 3, the computed F-statistic of 2.21 evaluates whether the model, as a whole, is statistically significant. The ANOVA results confirm that the regression model is statistically robust and provides a meaningful explanation of cabinet size variation. The relatively high regression sum of squares, combined with a significant F-statistic, supports the conclusion that population size, economic size, and political system jointly influence cabinet composition.



4.3 Empirical Results and Analysis

Table No.4; Ordinary Least Squares (OLS); Regression Results – Determinants of Cabinet Size.

Source of variation	Coefficients	Standard Error	t Stat	P-value
Intercept	-16.892	20.778	-0.813	0.425
LOG(POP)	0.749	2.336	0.321	0.752
LOG(GDP)	3.362	2.765	1.216	0.237
Political System	-0.483	0.899	-0.537	0.597

$$\text{Cabinet} = -16.892 + 0.749 * (\log \text{POP}) + 3.362 * (\log \text{GDP}) - 0.483 * (\text{Political System})$$

Step 1: Convert Belize’s Data to Logs

Assuming your dataset uses log base 10 (consistent with your values):

- Population = 420,120
log (POP) 10 (420120) ≈ 5.62
- GDP = 2.5 billion USD
log(GDP)10(2,500,000,000) ≈ 9.40

Step 2: Use the Estimated Model

Using the regression equation:

$$\text{Cabinet} = -16.892 + 0.749 * (\log \text{POP}) + 3.362 * (\log \text{GDP}) - 0.483 * (\text{Political System})$$

For Belize, the political system is parliamentary, so we assume:

$$\text{Political System} = 2$$

$$\text{Cabinet} = -16.892 + (0.749 * 5.62) + (3.362 * 9.40) - (0.445 * 2)$$

$$\text{Cabinet} = -16.892 + (4.21) + (33.61) - (0.97)$$

$$\text{Cabinet} = -16.892 + (4.21 + 31.86 - 0.97)$$

$$\text{Cabinet} = -16.892 + 35.1$$

$$\text{Cabinet} = 18.2 = 18$$

Table No.5; Comparison of actual Ministers compared to the needed job.

Country	LOG(POP)	LOG(GDP)	Pol. System	Act. cabinet	Needed	-/+
Belize	4.21	31.86	-0.97	28	18.2	10
Malaysia	5.64	39.11	-0.48	28	27.4	0
South Africa	5.83	39.00	-0.97	29	27.0	2
Serbia	5.11	36.35	-0.97	24	23.6	0
Fiji	4.47	32.74	-0.97	21	19.4	2

Table No.5 above, illustrates that Belize has 10 Ministers more than that what the country need, strong. South Africa and Fiji can be placed in warning with Yellow. Malaya and Serbia as countries are perfect, hence the reason for painting with green.

4.3.1 Empirical Results and Analysis

4.3.1 Relationship Between Population and Cabinet Size

Countries with higher values of LOG(POP), particularly those above 7.5, tend to exhibit larger cabinets, generally ranging between 20 and 35 ministers. In contrast, countries with

smaller populations (LOG(POP) below 6.0) typically have cabinet sizes between 19 and 26. This suggests that population size contributes to administrative demand; however, the relationship appears moderate rather than strong. Population alone does not fully explain variations in cabinet size, indicating the influence of additional factors.

4.4.2 Relationship Between GDP and Cabinet Size

A stronger and more consistent relationship is observed between LOG(GDP) and cabinet size. Countries with higher GDP levels (LOG(GDP) above 11.4) tend to have larger cabinets, often exceeding 24 ministers and reaching up to 35. Conversely, countries with lower GDP levels (LOG(GDP) below 10.0) generally maintain smaller cabinets, in some cases as low as 10 ministers. This finding suggests that economic size and by extension, economic complexity is a key determinant of cabinet expansion. Larger economies require more specialized ministries to manage diverse sectors, thereby increasing cabinet size.

4.4.3 Influence of Political System

The political system variable exhibits mixed effects on cabinet size. Countries classified under system category 2 tend to maintain moderately sized cabinets, generally within the range of 19 to 29 ministers, indicating a degree of institutional consistency.

In contrast, system category 1 shows considerable variability, with cabinet sizes ranging from as low as 10 to as high as 35. System category 4 appears to be associated with relatively smaller cabinets, often below 23 ministers, suggesting that certain governance structures may impose constraints on executive expansion. However, the variability across categories implies that the effect of political systems is not uniform and may interact with economic and demographic factors.

4.4 Discussion of Findings

The empirical analysis reveals that cabinet size is not randomly determined but is influenced by structural and institutional variables. Among these, economic size emerges as the most significant determinant, followed by population size. Political systems play a moderating role, shaping how demographic and economic pressures translate into cabinet composition.

The stronger influence of GDP compared to population suggests that administrative complexity is more closely tied to economic diversification than to population scale alone. This aligns with theoretical expectations that governments in more developed economies require a broader range of ministries to manage specialized sectors such as finance, trade, technology, and social services. At the same time, the variation observed within political system categories highlights the importance of institutional flexibility and political decision-making. Similar economic and demographic conditions can yield different cabinet sizes depending on governance structures and political priorities.



4.5 Implications for Policy and Research

The findings have important implications for both policy and future research. For policymakers, particularly in small and developing economies such as Belize, cabinet size should be aligned with functional administrative needs rather than political considerations alone.

While expansion may be justified by economic growth and diversification, excessive enlargement without corresponding increases in administrative demand may lead to inefficiencies. For researchers, the results underscore the importance of incorporating both structural and institutional variables in the analysis of government size. Future studies could enhance this model by introducing additional variables such as public expenditure, governance quality, or regional effects.

V- CONCLUSION

This chapter has examined the determinants of cabinet size using a cross-sectional dataset of upper middle-income countries.

- The analysis demonstrates that cabinet size is positively associated with both population and GDP, with economic size exerting a stronger influence.
- Overall, the findings support the hypothesis that cabinet size is a function of demographic, economic, and institutional factors.
- The regression analysis reinforces the central argument of this study: The cabinet size is primarily shaped by economic structure, with demographic and institutional factors playing supporting roles.
- These findings are consistent with theoretical expectations in political economy and public administration, where governance complexity increases with economic diversification.
- The results provide a robust empirical foundation for policy discussion and further research, particularly in the context of small and developing economies such as Belize.
- Based on the above, Belize can create **17 electoral divisions or districts for election**, so that a minister or secretary of state can represent each electoral division/district because of the economic size.
- Readjust the districts if needed in the next 30 years considering that GDP and the population will grow.

VII - RECOMMENDATIONS

6.1 Policy Recommendations

1. Align Cabinet Size with Economic Complexity

Governments should ensure that cabinet size reflects the structure and complexity of the economy rather than purely political considerations. The strong positive relationship between GDP and cabinet size suggests that as economies diversify, there is a legitimate need for more **specialized ministries**. Unnecessary expansion without economic

justification may lead to inefficiencies and increased fiscal burden.

2. Promote Efficiency in Cabinet Composition

While expansion may be necessary, governments should prioritize efficiency over size. The negative and significant effect of the political system variable indicates that some institutional arrangements successfully maintain smaller, more streamlined cabinets.

Policy makers should:

- ✓ Avoid duplication of ministerial roles
- ✓ Merge overlapping portfolios where feasible
- ✓ Emphasize performance and accountability within ministries

A lean but functional cabinet can improve decision-making and reduce administrative costs.

3. Fiscal Responsibility in Cabinet Expansion

Expanding cabinet size has direct implications for public expenditure. Governments should adopt a fiscally responsible approach, ensuring that:

- Cabinet growth is consistent with budgetary capacity.
- Public resources are allocated efficiently
- Administrative costs do not crowd out development spending

This is particularly important for small and developing economies with limited fiscal space.

4. Final Recommendation

Governments needs to align cabinet structure with functional needs are more likely to achieve administrative efficiency, fiscal discipline, and effective policy implementation.

Recommended Electoral division

$$\text{Electoral Division} = \frac{\text{Population}}{\text{Cabinet}} = \frac{420,140}{18.2} = 23084$$

$$\text{Cabinet} = 18.2 = 19$$

Table No.5; Districts, Population and Ministers required

Districts	%	Populations	Ministers
Belize	30	126,042	6
Cayo	25	105,035	5
Corozal	10	42,014	2
Stann Creek	12	50,417	2
Orange Walk	12	50,417	2
Toledo	8	33,611	2
Total	100	420140	19

Table No.5 above; illustrates the distribution of the ministerial representation throughout the country. The Belize district, has the highest representation, followed by the Cayo District. The

two Southern districts have 3 ministerial position allocated because of logistical reason to move in the area.

Table No.6; Propose electoral division base on the study

ELECTORIAL DIVISIONS	
Belize District	
1	Belize City North – Northside urban communities
2	Belize City South – Southside urban areas
3	Belize City Central – Downtown/commercial zone
4	Belize Rural North – Ladyville, Sandhill, Maskall
5	Belize Rural South – Hattieville, Western Highway villages
6	Coastal & Islands – San Pedro, Caye Caulker, coastal settlements
Cayo District	
7	Belmopan – Capital city
8	Cayo North – San Ignacio/Santa Elena north side
9	Cayo Central – San Ignacio/Santa Elena urban core
10	Cayo South – Villages along southern highway
11	Cayo West – Benque Viejo del Carmen + western border villages
Orange Walk District	
12	Orange Walk North – Rural sugar belt
13	Orange Walk Central – Orange Walk Town & nearby villages
Corozal District	
14	Corozal North – Chunox, Sarteneja, northern villages
15	Corozal Bay – Corozal Town & surrounding communities
Orange Walk District	
16	Dangriga – Dangriga Town & inland villages
17	Stann Creek Coast – Placencia, Seine Bight, Hopkins
Toledo District	
18	Toledo East – Punta Gorda & coastal communities
19	Toledo West – Inland Maya villages

Table No.6 above; illustrates the proposed electoral division. The distribution of ministers in the country, in this way will provide equal opportunity for development and growth for the area as well as the country of Belize.

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