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Article

# Addressing Current Research Gaps in International Relations Studies: A Qualitative Analysis of Emerging Global Challenges

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## Abstract

The field of international relations faces significant research gaps as traditional frameworks struggle to address emerging challenges in the twenty-first century. This research paper presents a comprehensive qualitative analysis of four priority research domains that require urgent scholarly attention: artificial intelligence governance and global power dynamics, climate security and interstate conflict, digital sovereignty in the Global South, and non-state actors in hybrid warfare. Through systematic literature review and thematic analysis, this study identifies critical theoretical and empirical gaps in existing scholarships while proposing frameworks for addressing these deficiencies. The research employs a qualitative methodology incorporating document analysis, comparative case studies, and interpretive analysis of policy documents and academic literature. Findings reveal that traditional international relations theories, including realism, liberalism, and constructivism, require significant adaptation to address the multidimensional challenges posed by technological transformation, environmental change, and evolving security paradigms. The paper concludes with evidence-based recommendations for future research agendas, emphasizing interdisciplinary collaboration, methodological innovation, and policy-relevant scholarship. This analysis contributes to the ongoing discourse on advancing international relations scholarship in an era of unprecedented global complexity and interconnection.

**Keywords:** international relations theory; artificial intelligence governance; climate security; digital sovereignty; hybrid warfare; qualitative research; non-state actors; and global governance

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## 1. Introduction

The discipline of international relations stands at a critical juncture where established theoretical frameworks and methodological approaches increasingly struggle to explain and predict contemporary global phenomena. The accelerating pace of technological change, the intensifying impacts of climate change, and the evolving nature of warfare and security threats have created a landscape that demands new analytical tools and conceptual innovations. Traditional paradigms that served scholars well during the Cold War era and its immediate aftermath now require fundamental reconsideration to remain relevant in addressing the complex challenges of the twenty-first century. This research paper addresses this gap by systematically examining four priority areas where current international relations scholarship is insufficient to guide policy and practice.

The selection of these four research domains—artificial intelligence governance, climate security, digital sovereignty, and hybrid warfare—reflects both their urgency in real-world implications and their potential for theoretical innovation. Each topic represents a domain where the boundaries between traditional categories of analysis have become increasingly blurred. AI capabilities simultaneously function as military assets, economic multipliers, and diplomatic tools, challenging conventional distinctions between hard and soft power. Climate change operates as both an environmental stressor and a security threat, requiring integration of natural science data with

political analysis. Digital sovereignty questions traditional notions of territorial control and state authority in an era of transnational data flows. Hybrid warfare obscures the distinction between state and non-state actors, peace and conflict, and military and civilian domains.

The significance of this research extends beyond academic interest to encompass practical policy implications. Decision-makers in government, international organizations, and civil society increasingly require evidence-based guidance on issues that existing theoretical frameworks cannot adequately address. The gap between scholarly analysis and policy needs has widened considerably in recent years, as the rapid pace of technological and environmental change has outstripped the capacity of academic research to provide timely insights. This paper aims to contribute to narrowing this gap by identifying specific areas requiring attention and proposing frameworks for addressing them.

The research employs a qualitative methodology that combines systematic literature review, comparative case analysis, and interpretive policy analysis. This approach is particularly appropriate given the exploratory nature of the research questions and the need to develop new theoretical frameworks rather than test existing hypotheses. The qualitative approach allows for the nuanced analysis of complex phenomena that resist quantification while maintaining analytical rigor through transparent methodology and systematic data collection procedures. The following sections present the theoretical foundations, methodology, detailed analysis of each research domain, and comprehensive recommendations for future scholarship.

Furthermore, the interconnected nature of these four research domains presents additional analytical challenges and opportunities. AI governance intersects with hybrid warfare through autonomous weapons systems and cyber operations. Climate security connects with digital sovereignty through questions of environmental data and monitoring. The four domains share common features that suggest broader patterns in how international relations is evolving, including the increasing role of non-state actors, the blurring of traditional boundaries between domestic and international affairs, and the growing importance of technology as both a source of power and a domain of competition. These interconnections suggest that addressing research gaps requires not only domain-specific analysis but also cross-cutting theoretical and methodological innovation.

## 2. Literature Review and Theoretical Framework

This section examines the foundational scholarship and conceptual underpinnings relevant to the four priority domains identified in this study: artificial intelligence governance, climate security, digital sovereignty, and hybrid warfare. By reviewing the principal theoretical traditions in international relations—realism, liberalism, and constructivism—alongside emerging challenges posed by technological, environmental, and security transformations, the literature review highlights both the strengths and the limitations of existing frameworks. The discussion explores how traditional paradigms have approached issues of power, sovereignty, and security, and identifies the gaps that have become increasingly apparent in the face of rapid global change. In turn, the review sets the stage for the development of new theoretical approaches that can more effectively capture the complexity and interconnectedness of contemporary international affairs. The section concludes by outlining the necessity for interdisciplinary perspectives and methodological innovation to advance the field and address pressing research gaps.

### 2.1. *Traditional International Relations Theories*

The theoretical foundations of international relations scholarship have historically rested upon three dominant paradigms: realism, liberalism, and constructivism. Each of these traditions offers distinct analytical perspectives on state behavior, power dynamics, and international cooperation, yet each faces significant limitations when applied to emerging global challenges. Realist theory, with its emphasis on state sovereignty, military capability, and balance of power dynamics, provides essential insights into great power competition but struggles to incorporate non-material forms of power and influence that characterize contemporary international relations (Waltz, 2010). The realist assumption that states are unitary rational actors acting in an anarchic international system fails to

capture the complexity of decision-making processes in an era of networked governance and transnational actor influence.

Liberal international relations theory, emphasizing the role of institutions, economic interdependence, and democratic governance in promoting cooperation, offers important correctives to realist pessimism but faces its own limitations in explaining contemporary phenomena. The liberal faith in institutional effectiveness has been challenged by the proliferation of forum shopping, institutional fragmentation, and the emergence of alternative governance mechanisms that operate outside traditional multilateral frameworks (Keohane & Victor, 2011). Similarly, liberal assumptions about the pacifying effects of economic interdependence require reconsideration in light of weaponized interdependence, where states exploit network centrality and asymmetric dependencies for strategic advantage (Farrell & Newman, 2019). The liberal emphasis on domestic political structures as determinants of foreign policy behavior also requires updating to account for how technological change affects the relationship between domestic politics and international outcomes.

Constructivist approaches, which emphasize the role of norms, identities, and social structures in shaping international outcomes, have contributed significantly to understanding non-material dimensions of international relations. However, constructivist scholarship has often struggled to address rapid technological change and its implications for identity formation, norm diffusion, and social structure. The emphasis on intersubjective meanings and social construction provides important insights but requires extension to address how algorithmic systems, digital platforms, and artificial intelligence reshape the social processes that constructivist scholars study (Hoffmann, 2019). The question of how norms emerge, evolve, and influence behavior in digital environments where algorithmic curation shapes information flows present particular challenges for constructivist analysis.

## 2.2. *Emerging Theoretical Challenges*

The four research domains examined in this paper present distinct theoretical challenges that existing frameworks struggle to address. In the realm of artificial intelligence governance, traditional concepts of power require fundamental reconsideration. AI capabilities represent a novel form of power that does not fit neatly into conventional categories of hard, soft, or smart power. The dual-use nature of AI technologies, functioning simultaneously as military capabilities, economic drivers, and instruments of influence, creates analytical challenges that existing theoretical tools cannot adequately address (Cummings, 2017). Furthermore, the role of non-state actors—particularly technology corporations—in developing and deploying AI systems challenges state-centric assumptions underlying most international relations theories.

Climate security presents equally significant theoretical challenges. The traditional separation between environmental politics and security studies has obscured the complex causal pathways linking climate change to conflict, cooperation, and institutional development. While recent scholarship has begun to bridge this divide, existing frameworks tend to treat climate as an exogenous variable rather than analyzing its role in reshaping the fundamental structures of international relations (Barnett, 2003). The implications of climate change for sovereignty, territory, and international law require theoretical innovation that existing paradigms cannot provide. Climate-induced migration, resource competition, and the potential for both conflict and cooperation create analytical complexities that demand new theoretical approaches.

Digital sovereignty represents a particularly challenging domain for traditional international relations theory. The concept of sovereignty itself, foundational to the discipline, requires fundamental reconsideration in the digital age. Traditional notions of territorial control and exclusive authority struggle to accommodate the borderless nature of data flows, cloud computing, and digital platforms. The emergence of digital sovereignty claims by states in the Global South challenges Western-centric assumptions about internet governance and digital policy, yet existing theoretical frameworks provide limited guidance for analyzing these developments (Couture & Toupin, 2019). The intersection of digital sovereignty with broader questions of development, inequality, and global justice requires theoretical innovation that existing paradigms cannot adequately provide.

Hybrid warfare presents fundamental challenges to the conceptual foundations of security studies. The traditional distinction between war and peace, between state and non-state actors, and between military and civilian domains becomes increasingly problematic in analyzing hybrid threats. The role of private military companies, cyber mercenaries, and influence operations through non-state media networks creates analytical complexities that existing frameworks struggle to address (Reichborn-Kjennerud & Olsen, 2019). The question of attribution—who is responsible for hybrid attacks and how states should respond—challenges traditional concepts of deterrence and international law.

### 2.3. *The Need for Theoretical Innovation*

The limitations of existing theoretical frameworks across all four research domains suggest the need for significant theoretical innovation in international relations scholarship. Such innovation must address several cross-cutting themes that emerge from this analysis. First, the relationship between technology and power requires systematic theoretical attention. Traditional theories developed in an era when technological change was slower and its implications for international relations more limited. The accelerating pace of technological innovation, its differential effects across states and regions, and its role in reshaping the fundamental structures of international politics demand new theoretical approaches.

Second, the question of agency in international relations requires reconsideration. Traditional theories, particularly realist approaches, privilege state actors and treat non-state actors as secondary or derivative. The analysis presented here suggests that non-state actors—technology corporations, private military companies, cyber mercenaries, digital platforms—exercise increasingly significant agency in international relations. Theoretical frameworks must be developed that can accommodate multiple types of actors and analyze their interactions in shaping international outcomes. This requires moving beyond the state-centric assumptions that continue to dominate much of the discipline.

Third, the relationship between domestic and international politics requires re-examination. The traditional separation between these domains, while always problematic, has become increasingly untenable in an era of digital connectivity, transnational threats, and hybrid operations that simultaneously target domestic and international audiences. Theoretical frameworks that can integrate analysis across these levels while maintaining attention to the specific mechanisms operating at each level represent an important direction for innovation.

## 3. Methodology

This section outlines the methodological approach adopted in this study to investigate the evolving theoretical and practical challenges in contemporary international relations. Recognizing the complexity and multidimensionality of issues such as artificial intelligence governance, climate security, digital sovereignty, and hybrid warfare, the research employs a qualitative methodology grounded in interpretivist and critical realist traditions. Through a combination of systematic literature review, comparative case analysis, and interpretive policy analysis, the study seeks to provide a nuanced understanding of how scholars and policymakers conceptualize and respond to emerging global challenges. The following subsections detail the philosophical foundations, research design, data collection processes, analytical techniques, and ethical considerations that inform this research, ensuring rigor and transparency throughout the inquiry.

### 3.1. *Research Design and Philosophical Foundations*

This study employs a qualitative research methodology grounded in an interpretivist epistemological position that recognizes the socially constructed nature of international relations phenomena. The interpretivist approach is particularly appropriate for this research given the focus on understanding the meanings, interpretations, and conceptual frameworks that scholars and policymakers bring to emerging challenges in international relations. Unlike positivist approaches

that seek to identify objective causal relationships through hypothesis testing, the interpretivist orientation of this study emphasizes the importance of understanding how actors construct meaning and make sense of complex phenomena (Schwartz-Shea & Yanow, 2012).

The ontological position underlying this research is one of critical realism, which acknowledges the existence of a reality independent of our perceptions while recognizing that our knowledge of that reality is always mediated by social, cultural, and theoretical frameworks. This position is particularly appropriate for international relations research, where phenomena such as sovereignty, power, and security have both material and ideational dimensions. Critical realism allows for analysis of how material conditions shape possibilities while acknowledging that actors' interpretations of those conditions significantly influence outcomes.

The research design incorporates multiple qualitative methods to ensure methodological triangulation and enhance the credibility of findings. The primary methods include systematic literature review, comparative case analysis, and interpretive policy analysis. Each method contributes distinct strengths to the overall research design while providing complementary perspectives on the research questions. The systematic literature review establishes the current state of knowledge in each domain, the comparative case analysis enables in-depth examination of specific instances, and the interpretive policy analysis provides insights into how policymakers understand and respond to emerging challenges.

### 3.2. Data Collection and Analysis

Data collection proceeded through multiple phases designed to capture the breadth and depth of scholarship and policy discourse on each research domain. The first phase involved systematic searches of academic databases including JSTOR, Web of Science, Scopus, and Google Scholar for peer-reviewed articles, books, and book chapters relevant to each topic. Search terms were developed iteratively through preliminary scanning of the literature and refined to ensure comprehensive coverage. Additional searches targeted policy documents from governmental and intergovernmental sources, think tank reports, and working papers from academic institutions.

The analytical approach employed thematic analysis as the primary technique for identifying patterns, themes, and conceptual categories across the collected materials. Thematic analysis is particularly appropriate for this research given its flexibility in accommodating diverse data types and its capacity to generate both descriptive and interpretive findings (Braun & Clarke, 2006). The analysis proceeded through six phases: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Throughout this process, the researcher maintained detailed analytical memos documenting interpretive decisions and reflexive considerations.

Quality assurance measures were implemented throughout the research process to enhance the trustworthiness of findings. These measures included maintaining an audit trail of analytical decisions, engaging in peer debriefing with colleagues, and conducting member checking by sharing preliminary findings with subject matter experts. The researcher also maintained reflexive awareness of how personal assumptions and disciplinary background might influence interpretation, documenting these considerations in analytical memos. The combination of these measures supports the credibility, transferability, dependability, and confirmability of the research findings.

### 3.3. Ethical Considerations

While this research primarily involves analysis of publicly available documents and does not include human subjects research, several ethical considerations guided the research process. First, attention was paid to ensuring accurate representation of sources, particularly when summarizing or paraphrasing complex arguments. Second, efforts were made to include diverse perspectives from different geographic regions and theoretical traditions, avoiding the exclusive reliance on Western-centric sources that characterizes much of international relations scholarship. Third, transparency

about methodological choices and analytical decisions supports the integrity of the research and enables critical assessment by readers.

**Table 1.** Summary of Methodological Framework for International Relations Research.

Methodological Component	Approach	Rationale
Epistemology	Interpretivist	Recognizes socially constructed nature of IR phenomena
Ontology	Critical Realist	Acknowledges material and ideational dimensions
Research Design	Multi-method qualitative	Enables triangulation and comprehensive analysis
Primary Methods	Literature review, case analysis, policy analysis	Captures academic and policy perspectives
Analysis Technique	Thematic analysis	Flexible approach for identifying patterns
Quality Assurance	Audit trail, peer debriefing, member checking	Enhances trustworthiness of findings

Source: Author's compilation based on methodological frameworks from Schwartz-Shea & Yanow (2012) and Braun & Clarke (2006).

## 4. Research Domain Analysis

The rapid advancement of artificial intelligence (AI) has dramatically reshaped the landscape of international relations, global governance, and power dynamics. As AI technologies become increasingly embedded in the economic, political, and security domains of states, understanding their broader implications is essential for both scholars and policymakers. This section provides a comprehensive analysis of the research domain at the intersection of AI governance and international power structures, outlining the methodologies, analytical techniques, and quality assurance measures that underpin this inquiry. Drawing on established methodological frameworks, the analysis seeks to bridge existing gaps in the literature by examining how AI influences state behavior, alliance formations, and the structure of the international system. Through a combination of literature review, thematic analysis, and case studies, this research domain analysis sets the foundation for addressing some of the most pressing and underexplored questions in contemporary global affairs.

### 4.1. AI Governance and Global Power Dynamics

Artificial intelligence (AI) is rapidly becoming a pivotal force in shaping global power dynamics and governance structures. As nations and international organizations grapple with the challenges and opportunities presented by AI, the influence of this technology extends far beyond technical innovation, permeating economic, political, and security spheres. The governance of AI—encompassing regulatory frameworks, ethical standards, and strategic policy decisions—plays a crucial role in determining how states and other actors wield influence, form alliances, and compete on the world stage. This section introduces the central themes and research questions at the intersection of AI governance and international power relations, highlighting the need to move beyond traditional concepts of power to understand AI's transformative impact on the structure and behavior of global actors. By exploring both the material and intangible aspects of AI leadership, this analysis aims to provide a foundation for examining the evolving landscape of international competition, cooperation, and governance in the age of artificial intelligence.

#### 4.1.1. Research Gap Identification

The intersection of artificial intelligence and international relations represents one of the most significant and underexplored areas in contemporary scholarship. Existing literature inadequately addresses how artificial intelligence reshapes power distribution among states and non-state actors. Traditional concepts of hard and soft power fail to capture AI's dual nature as both military capability and economic multiplier. The gap is particularly evident in understanding how AI leadership affects alliance structures, deterrence dynamics, and the fundamental nature of international competition (Payne, 2021). While substantial attention has been devoted to the technical and ethical dimensions of AI development, the implications for international relations theory and practice remain significantly underdeveloped.

The literature on AI governance has predominantly focused on technical standards, ethical guidelines, and regulatory frameworks at the national and international levels. Important work has examined the European Union's AI Act, China's AI development strategy, and various multilateral initiatives to establish norms for responsible AI development. However, this scholarship often treats AI governance as a discrete policy domain rather than analyzing its implications for broader patterns of international relations (Maas, 2019). The question of how AI capabilities affect state power, alliance politics, and international order requires theoretical innovation that existing literature does not adequately provide.

A particularly significant gap concerns the role of technology transfer as a strategic tool and its implications for power dynamics. The U.S.-China competition in AI development has been extensively documented, but analytical frameworks for understanding this competition remain underdeveloped. The emergence of export controls on advanced semiconductors, restrictions on technology investment, and concerns about technology transfer through academic collaboration represent new forms of strategic competition that existing theoretical frameworks struggle to analyze (Congressional Research Service, 2025). The question of how these measures affect alliance structures—whether they strengthen or strain relationships with allies who have different economic interests—requires systematic investigation that current literature does not provide.

Furthermore, the literature has not adequately addressed how AI governance interacts with existing international institutions and regimes. The proliferation of AI-related initiatives across multiple forums—from the G7 and G20 to UNESCO and the International Telecommunication Union—creates coordination challenges and opportunities for forum shopping that existing institutional theory cannot fully explain. The relationship between AI governance and other governance domains, including trade, security, and human rights, requires analysis that bridges traditional disciplinary boundaries and policy silos.

#### 4.1.2. Proposed Research Framework

Addressing these gaps requires developing new theoretical models that link AI development indices to traditional power metrics while accounting for the unique characteristics of AI as a transformative technology. Such models must incorporate both material capabilities—computing infrastructure, talent pools, investment levels—and intangible factors such as regulatory influence, standard-setting capacity, and soft power associated with AI leadership. The framework should enable analysis of how AI capabilities interact with other dimensions of national power and how AI leadership affects state behavior in the international system.

Case studies should include the U.S.-China AI competition, EU regulatory approaches, and the role of middle powers in navigating great power technology competition. Each case offers distinct analytical opportunities. The U.S.-China competition provides insight into how AI capabilities affect bilateral relationships and alliance structures. The EU approach demonstrates how regulatory power can substitute for technological leadership in certain domains. Middle powers offer perspectives on how states can maintain strategic autonomy and technological development capacity amid great power competition. Comparative analysis across these cases can identify patterns and generate theoretical insights applicable to broader contexts.

The research should also examine the emergence of new security dilemmas associated with AI development. The speed of AI advancement, the dual-use nature of many AI technologies, and the potential for rapid shifts in the balance of technological capability create conditions that may generate security dilemma dynamics distinct from those associated with traditional military capabilities. Understanding whether AI competition produces spirals of mistrust and competition or can be managed through governance mechanisms represents a critical question for both theoretical development and policy prescription.

**Table 2.** Key Research Dimensions in AI Governance and Global Power Dynamics.

Research Dimension	Key Questions	Analytical Approach
Power Distribution	How does AI reshape relative capabilities?	Development of AI power indices
Alliance Politics	How do AI capabilities affect alliance structures?	Comparative case analysis
Technology Transfer	What strategic implications of AI-related transfers?	Policy document analysis
Security Dilemmas	Do AI capabilities create new security dilemmas?	Theoretical modeling
Governance Mechanisms	What governance structures emerge for AI?	Institutional analysis
Non-State Actors	What role do corporations play in AI power?	Network analysis

Source: Author's compilation based on analysis of research gaps in AI governance literature (Payne, 2021; Maas, 2019; Cummings, 2017).

#### 4.2. Climate Security and Interstate Conflict

The intersection of climate change and security has emerged as a critical area of concern within international relations, particularly as environmental stress increasingly shapes the dynamics between states. Climate security examines how shifts in environmental conditions—such as extreme weather events, resource scarcity, and climate-induced migration—can escalate tensions and contribute to interstate conflict. Despite growing recognition of these risks, scholarships have often lacked robust frameworks for analyzing the direct and indirect pathways by which climate factors influence state behavior, alliance formation, and the emergence of new challenges to global stability. This section explores the evolving nature of climate security, focusing on the complexities of interstate conflict and the need for systematic research to understand the mechanisms linking environmental change to security outcomes. By integrating theoretical and empirical perspectives, the discussion provides a foundation for addressing gaps in the literature and developing approaches that can inform policy and governance in an era of intensifying climate threats.

##### 4.2.1. Research Gap Identification

Climate change is increasingly recognized as a security threat, yet international relations scholarship lacks robust frameworks linking environmental stress to conflict escalation pathways. Most existing studies treat climate as a background variable rather than analyzing its direct causal mechanisms in shaping international outcomes. The gap is most pronounced in understanding climate's role in alliance formation, resource competition, and the emergence of new forms of cooperation and conflict that transcend traditional analytical categories (Barnett, 2003). While significant attention has been devoted to climate change as an environmental and economic issue, the security dimensions require more systematic theoretical and empirical investigation.

The literature on climate and conflict has produced contested findings regarding the relationship between environmental stress and violent conflict. Some studies find significant correlations between temperature anomalies, rainfall variability, and conflict incidence, while others emphasize the importance of political institutions, economic conditions, and social factors in mediating these relationships (Mach et al., 2019). These debates reflect both methodological challenges and theoretical limitations. The question of how climate change interacts with existing political, economic, and social structures to produce security outcomes remains inadequately addressed. Furthermore, the literature has focused predominantly on intrastate conflict, with relatively less attention to interstate dynamics and the implications for international relations.

A particularly significant gap concerns the potential for climate cooperation to serve as a confidence-building measure and contribute to broader patterns of peace and stability. While environmental peacemaking has received some scholarly attention, the specific mechanisms through which climate cooperation might contribute to security remain underexplored. The Paris Agreement and other multilateral frameworks create opportunities for cooperation, but the security implications of these arrangements require systematic analysis that current literature does not adequately provide. Similarly, the potential for climate-induced migration to create both conflict and cooperation opportunities demands theoretical innovation and empirical investigation.

Additionally, the literature has not adequately addressed the implications of climate change for sovereignty and territorial integrity. Rising sea levels threaten the existence of small island states and may require relocation of populations from coastal areas. The opening of Arctic shipping routes creates new geopolitical competition and governance challenges. These developments have profound implications for concepts of sovereignty, territory, and international law that remain underexplored in existing scholarship.

#### 4.2.2. Proposed Research Framework

Research on climate security should examine multiple causal pathways linking environmental stress to international outcomes. First, comparative analysis of water conflict resolution mechanisms can identify factors that promote cooperation rather than conflict over shared resources. Second, investigation of climate-induced migration as a driver of regional instability requires integration of migration studies with security analysis. Third, analysis of climate cooperation as a confidence-building measure can contribute to understanding environmental peacemaking. Throughout this research, integration of environmental science data with political analysis is essential for establishing evidence-based correlations and understanding causal mechanisms.

The research should adopt a multi-level analytical framework that examines climate security at the local, national, regional, and global levels. Climate impacts operate differently at each level, and the interactions between levels create complex dynamics that single-level analysis cannot capture. Local-level conflicts over resources may escalate to national and regional levels, while global governance frameworks shape local and national responses. Understanding these multi-level dynamics requires methodological approaches that can integrate analysis across scales while maintaining attention to the specific mechanisms operating at each level.

Furthermore, the research should examine the emerging concept of the 'climatization of security'—the process by which climate change becomes integrated into security discourse and institutions. This includes analysis of how security agencies are incorporating climate considerations into threat assessments, how climate issues are being securitized in political discourse, and the implications of these processes for both security policy and climate governance. Understanding these dynamics contributes to broader theoretical debates about securitization and the politics of security.

**Table 3.** Climate Security Dimensions and Their Impacts on International Relations.

Security Dimension	Climate Factor	Potential Outcomes
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Resource Competition	Water scarcity, agricultural stress	Conflict or cooperation over shared resources
Migration Pressures	Sea-level rise, extreme weather	Cross-border movement, regional instability
Territorial Change	Rising sea levels, Arctic opening	Sovereignty disputes, new shipping routes
Food Security	Agricultural disruption	Price volatility, civil unrest, trade conflicts
Cooperation Opportunities	Shared environmental challenges	Environmental peacemaking, institutional development
Securitization Dynamics	Climate as security threat	Policy changes, institutional adaptation

Source: Author's compilation based on climate security literature (Barnett, 2003; Mach et al., 2019; Barnett & Adger, 2007).

#### 4.3. Digital Sovereignty in the Global South

As the digital revolution transforms economies and societies worldwide, questions of digital sovereignty have become increasingly central for countries seeking to shape their own technological futures. While much of the academic and policy debate has focused on the strategies and interests of major powers, the challenges and opportunities faced by nations in the Global South remain comparatively understudied. For developing countries across Africa, Latin America, and Southeast Asia, digital sovereignty is not only a matter of national security or geopolitical alignment, but also a critical factor in economic development, social equity, and the ability to participate meaningfully in global digital governance.

This section explores the multifaceted concept of digital sovereignty as it applies to the Global South. It examines how these countries navigate the complex terrain of digital dependency, global power competition, and the search for autonomy in an increasingly interconnected world. By analyzing the distinctive challenges, policy responses, and strategic choices available to developing nations, the discussion highlights the urgent need for more inclusive research and policy frameworks that recognize the agency and priorities of the Global South in shaping the future of the global digital order.

##### 4.3.1. Research Gap Identification

Western-centric international relations theories inadequately explain how developing nations navigate digital dependency while asserting sovereignty. Existing literature on digital governance focuses predominantly on great power competition—particularly the U.S.-China technology rivalry—with insufficient attention to the strategic choices available to smaller states and the distinctive challenges facing countries in the Global South (Couture & Toupin, 2019). The conceptual gap in understanding 'digital non-alignment' strategies limits policy guidance for emerging economies that must navigate between competing technological powers while pursuing development objectives.

The literature on digital sovereignty has emerged primarily from European and North American scholarship, with correspondingly limited attention to perspectives from the Global South. European debates about data localization, privacy regulation, and digital autonomy reflect specific concerns about U.S. technology dominance and Chinese technology influence that may not capture the priorities and constraints facing developing countries. Countries in Africa, Latin America, and Southeast Asia face distinct challenges related to digital infrastructure deficits, human capital limitations, and development priorities that shape their approaches to digital sovereignty in ways that existing literature inadequately addresses.

A particularly significant gap concerns the relationship between digital sovereignty and development. While digital transformation is widely recognized as essential for economic

development, the tensions between asserting digital sovereignty and accessing global digital infrastructure and services remain underexplored. Questions about data localization policies and their implications for economic development, the role of foreign technology investment in building digital capabilities, and the potential for regional cooperation to enhance digital sovereignty all require systematic investigation that current literature does not adequately provide.

Furthermore, the literature has not adequately addressed the phenomenon of 'digital colonialism'—the structural dependencies and asymmetries that characterize the relationship between Global South countries and dominant technology powers. Understanding how these dependencies are created and maintained, and how they might be addressed through policy and international cooperation, represents an important direction for research that bridges international relations, development studies, and science and technology studies.

#### 4.3.2. Proposed Research Framework

Research on digital sovereignty in the Global South should analyze multiple dimensions of the phenomenon. First, comparative study of data localization policies across Southeast Asia, Africa, and Latin America can identify patterns, determinants, and consequences of different approaches. Second, evaluation of multilateral digital governance initiatives—including those led by or focused on developing countries—can illuminate opportunities and constraints for collective action. Third, assessment of technology diversification as a hedging strategy can inform understanding of how states balance dependence on competing technology powers.

The research should prioritize giving voice to non-Western perspectives and policy approaches through engagement with scholarship and policy discourse from the Global South. This requires moving beyond analysis of Global South countries as objects of great power competition to understanding their agency in shaping digital governance outcomes. The research should examine how countries in the Global South are developing alternative approaches to digital governance that may not fit established theoretical frameworks but nonetheless represent significant innovations with potential applications beyond their immediate contexts.

Additionally, the research should examine the emerging phenomenon of 'digital non-alignment'—strategies by which states seek to maintain autonomy and flexibility in their technology relationships without fully aligning with either major technology power. Understanding the conditions under which such strategies are feasible, the tools available to states pursuing them, and the implications for global technology governance represents an important contribution to both theoretical development and policy prescription.

**Table 4.** Comparative Models of Digital Sovereignty in the Global South.

Model	Key Features	Representative Cases
State-Led Development	Government-driven digital infrastructure, local champions	China, Vietnam, Ethiopia
Regulatory Assertion	Strong data localization, privacy frameworks	India, Brazil, Indonesia
Strategic Hedging	Balancing engagement with multiple tech powers	Southeast Asian states, Kenya
Regional Integration	Collective digital infrastructure, shared standards	African Union, ASEAN
Open Digital Economy	Minimal restrictions, foreign investment focus	Singapore, Rwanda, UAE
Digital Non-Alignment	Autonomous positioning between tech powers	Brazil, South Africa, Mexico

Source: Author's compilation based on analysis of digital sovereignty approaches (Couture & Toupin, 2019; ECDPM, 2024; Policy Center for the New South, 2025).

#### 4.4. Non-State Actors and Hybrid Warfare

Hybrid warfare has fundamentally reshaped the landscape of international security by blending conventional and unconventional conflict, often blurring the boundaries between state and non-state actors. While traditional analyses of warfare have focused on the actions and strategies of sovereign states, the rise of non-state entities—ranging from private military companies to cyber mercenaries and media networks—has added new layers of complexity to contemporary conflict dynamics. These actors not only serve as proxies, agents, or collaborators for state interests, but also pursue independent agendas, making attribution, regulation, and response increasingly challenging. Understanding the diverse roles that non-state actors play in hybrid warfare is essential for developing effective theoretical frameworks, policy responses, and governance mechanisms that address the evolving nature of twenty-first century conflict.

##### 4.4.1. Research Gap Identification

Hybrid warfare studies focus disproportionately on state actors, underestimating the role of non-state entities as both perpetrators and victims of hybrid threats. Theoretical frameworks for analyzing proxy relationships, deniability mechanisms, and attribution challenges remain underdeveloped, impeding understanding of contemporary conflict dynamics where state and non-state boundaries increasingly blur (Reichborn-Kjennerud & Olsen, 2019). The evolution of warfare in the twenty-first century has fundamentally challenged traditional categories of analysis, yet international relations scholarship has not adequately adapted to these changes.

The literature on private military companies has grown significantly in recent years, particularly following the prominent role of such entities in conflicts including Ukraine and various African theaters. However, this literature has often focused on legal and ethical dimensions rather than analyzing PMCs as instruments of state power in the context of hybrid warfare. The question of how states use PMCs to achieve strategic objectives while maintaining plausible deniability requires systematic analysis that current literature does not adequately provide. Similarly, the relationship between state and non-state actors in hybrid warfare—whether characterized as proxy relationships, delegation, or something else—requires theoretical clarification.

A particularly significant gap concerns cyber mercenaries and the broader phenomenon of non-state actors conducting offensive cyber operations on behalf of states or other entities. The attribution problem in cyberspace creates opportunities for states to employ non-state actors while denying responsibility, yet existing frameworks for understanding this phenomenon remain underdeveloped. The role of influence operations conducted through non-state media networks—including social media platforms, news outlets, and other information channels—similarly requires analysis that existing security studies frameworks cannot adequately provide.

Furthermore, the literature has not adequately addressed the challenges that hybrid warfare poses for international law and institutions. The difficulty of attributing attacks, the involvement of non-state actors, and the blending of military and civilian domains create challenges for established legal frameworks. Understanding how international law might evolve to address these challenges, and what governance mechanisms might be developed to regulate hybrid warfare, represents an important direction for research that bridges international relations, security studies, and international law.

##### 4.4.2. Proposed Research Framework

Research on non-state actors in hybrid warfare should develop typologies of state-non-state relationships that capture the diversity of arrangements and their implications for international security. Such typologies must distinguish between different forms of relationship—delegation,

proxy, sponsorship, and others—while analyzing the conditions under which each form is likely to emerge and the strategic implications for both state and non-state actors. The framework should enable analysis of how these relationships affect deterrence, escalation, and conflict resolution.

Case studies should include private military companies as instruments of state power, cyber mercenaries and plausible deniability, and influence operations through non-state media networks. Each case offers insights into different dimensions of the broader phenomenon. PMC operations provide evidence on the use of non-state actors for kinetic operations. Cyber mercenaries illuminate the challenges of attribution in cyberspace. Influence operations through media networks demonstrate how non-state actors can be employed for strategic communication and political warfare. Comparative analysis across these cases can identify patterns and generate theoretical insights with broader applicability.

The research should also examine the regulatory and governance challenges posed by non-state actors in hybrid warfare. This includes analysis of existing legal frameworks—such as the Montreux Document on private military companies—and their adequacy for addressing contemporary challenges. It also includes examination of emerging governance mechanisms, including industry self-regulation, certification schemes, and multilateral initiatives. Understanding what governance approaches might effectively address the challenges posed by non-state actors in hybrid warfare represents an important contribution to both scholarly understanding and policy development.

**Table 5.** Typology of Non-State Actors in Hybrid Warfare.

Non-State Actor Type	Hybrid Warfare Role	State Relationship
Private Military Companies	Kinetic operations, security services	Contract, delegation, proxy
Cyber Mercenaries	Offensive cyber operations	Implicit authorization, sponsorship
Media Networks	Influence operations, disinformation	Covert support, amplification
Economic Actors	Sanctions evasion, resource extraction	Facilitation, toleration
Proxy Forces	Irregular warfare, deniable operations	Training, equipping, directing
Platform Companies	Information control, data access	Regulation, cooperation, coercion

*Source: Author's compilation based on hybrid warfare literature (Reichborn-Kjennerud & Olsen, 2019; Geneva Academy, 2024; TNO Defense Research, 2021).*

## 5. Discussion

This section synthesizes the main findings of the research, drawing together insights from the preceding analysis of AI governance, climate security, digital sovereignty, and hybrid warfare. It aims to explore the broader implications of these findings for theory, methodology, and policy within the field of international relations. By considering both the limitations of traditional approaches and the distinct challenges posed by contemporary developments, the discussion highlights the need for new conceptual frameworks, interdisciplinary strategies, and innovative policy responses to complex global issues. The following subsections address the theoretical, methodological, and policy implications that emerge from this research, providing a foundation for future scholarship and practical action.

### 5.1. Theoretical Implications

The analysis of these four research domains reveals significant theoretical implications for international relations scholarship. Across all domains, traditional theoretical frameworks prove inadequate for addressing emerging challenges, requiring fundamental reconsideration rather than incremental extension. The limitations are particularly evident in the assumptions underlying traditional theories about the nature of power, the boundaries of the international system, and the actors who matter in international relations. These limitations suggest that addressing research gaps in these domains requires not merely applying existing theories to new phenomena but developing new theoretical approaches that can accommodate the distinctive characteristics of contemporary international relations.

The concept of power emerges as particularly problematic across all four research domains. Traditional distinctions between hard and soft power, between material and ideational capabilities, fail to capture the nature of power in an era of AI, digital platforms, and hybrid threats. AI capabilities represent a form of power that is simultaneously material and ideational, military and economic, coercive and attractive. Digital sovereignty challenges traditional notions of territorial power, while hybrid warfare blurs distinctions between military and civilian, state and non-state forms of power. These developments suggest that international relations theory requires new conceptualizations of power that can accommodate these complexities.

The question of agency similarly requires reconsideration. Traditional theories, particularly realist approaches, assume that states are the primary actors in international relations, with non-state actors playing subordinate or derivative roles. The analysis presented here suggests that this assumption is increasingly problematic. Technology corporations developing AI systems, private military companies conducting military operations, cyber mercenaries launching attacks, and digital platforms shaping information environments all exercise significant agency in international relations. Theoretical frameworks must be developed that can accommodate multiple types of actors and analyze their interactions in shaping international outcomes.

The relationship between domestic and international politics requires re-examination in light of these findings. Traditional theories often treat domestic politics as exogenous to international relations or focus narrowly on how international factors affect domestic outcomes. The analysis presented here suggests that this relationship is more complex and bidirectional. Digital sovereignty policies reflect domestic political considerations while having international implications. Climate security connects local environmental impacts to global governance frameworks. Hybrid warfare operates simultaneously within and across state boundaries. These observations suggest the need for theoretical frameworks that can integrate domestic and international levels of analysis more effectively.

### 5.2. Methodological Implications

The research gaps identified in this analysis have significant methodological implications for international relations scholarship. The complexity of phenomena examined across the four domains—AI governance, climate security, digital sovereignty, and hybrid warfare—resists analysis through single-method approaches. Qualitative methods are essential for understanding meanings, interpretations, and conceptual frameworks, but quantitative methods may be necessary for establishing patterns across cases. Mixed-methods approaches that combine the strengths of different methodologies are likely to be most productive for advancing knowledge in these domains.

The analysis also suggests the importance of interdisciplinary approaches for addressing research gaps in these domains. AI governance requires engagement with computer science, engineering, and ethics alongside political science and international relations. Climate security demands integration of environmental science, economics, and security studies. Digital sovereignty involves legal, technical, and political dimensions that cannot be adequately addressed within disciplinary boundaries. Hybrid warfare requires understanding of military affairs, cyber security,

media studies, and political communication. These interdisciplinary requirements present both challenges and opportunities for international relations scholarship.

Data availability and quality present significant challenges for research in these domains. AI development involves proprietary technologies and corporate decisions that may not be publicly documented. Climate impacts and responses vary significantly across locations and time periods, creating challenges for comparative analysis. Digital sovereignty policies are evolving rapidly, with policy documents in multiple languages and regulatory frameworks. Hybrid warfare operations are, by their nature, conducted covertly, making systematic data collection difficult. These data challenges require methodological innovation, including creative approaches to data collection, validation strategies, and transparent acknowledgment of limitations.

### *5.3. Policy Implications*

The research gaps identified in this analysis have significant implications for policymakers seeking evidence-based guidance on emerging challenges. The disconnect between academic research and policy needs in these domains creates risks of poorly informed decisions, missed opportunities for effective action, and potential for unintended consequences from policies that do not adequately account for the complexity of the phenomena they address. Addressing these research gaps should be a priority for the scholarly community, but also for policymakers who require better analysis to support decision-making.

The analysis suggests several priorities for policy-relevant research. In AI governance, policymakers require frameworks for understanding how AI capabilities affect strategic competition, alliance management, and international cooperation. In climate security, decision-makers need analysis of causal pathways linking climate change to conflict and cooperation, as well as evaluation of intervention options. In digital sovereignty, governments in the Global South require guidance on balancing development objectives with autonomy concerns. In hybrid warfare, security agencies need updated frameworks for threat assessment and response planning that account for the role of non-state actors.

The relationship between academic research and policy communities requires attention. The gaps identified in this analysis reflect in part the incentives and structures of academic research, which may not reward policy-relevant work or rapid response to emerging issues. Mechanisms for better connecting academic research to policy needs—including funding for policy-relevant research, forums for researcher-policymaker engagement, and recognition of policy impact in academic evaluation—could help narrow the gap between scholarly analysis and policy requirements. The development of such mechanisms should be a priority for both academic institutions and policy organizations.

### *5.4. Cross-Domain Patterns and Interconnections*

A significant finding emerging from this analysis concerns the interconnections between the four research domains. These are not isolated areas requiring separate scholarly attention but rather interrelated phenomena that share common features and interact in complex ways. Understanding these interconnections is essential for developing comprehensive analytical frameworks that can address the full complexity of contemporary international relations.

The intersection of AI governance and hybrid warfare is particularly significant. AI capabilities are increasingly employed in cyber operations, influence campaigns, and autonomous weapons systems. The use of AI by both state and non-state actors in hybrid warfare contexts creates new challenges for attribution, deterrence, and conflict management. Similarly, the role of AI systems in content moderation and information curation affects the dynamics of influence operations conducted through digital platforms.

The relationship between climate security and digital sovereignty presents another important interconnection. Environmental monitoring and climate data collection increasingly rely on satellite systems, sensors, and digital infrastructure that raise questions about data sovereignty and

technological dependency. The governance of climate-related data, including questions about ownership, access, and control, connects climate security concerns with digital sovereignty debates. Understanding these interconnections is essential for comprehensive analysis of either domain.

## 6. Limitations

This research has several limitations that should be acknowledged. First, the qualitative methodology, while appropriate for the exploratory objectives of this study, does not permit statistical generalization or hypothesis testing. The findings represent interpretive analysis based on available evidence and should be understood as provisional insights requiring further investigation. Second, the focus on four research domains necessarily excludes other areas where international relations scholarship may face significant gaps. Additional domains—such as space governance, pandemic preparedness, or emerging financial technologies—could have been included and may merit similar analysis.

Third, the analysis relies primarily on English-language literature and policy documents, potentially missing perspectives and evidence from non-English sources. This limitation is particularly relevant for the analysis of digital sovereignty in the Global South, where important scholarship and policy discourse may occur in other languages. Fourth, the rapid pace of change in these domains means that some findings may become dated as new developments emerge. The research represents a snapshot of current knowledge gaps rather than a definitive statement of the research agenda for these domains.

Finally, the interpretivist approach adopted in this research involves subjectivity in coding, theme identification, and interpretation. While quality assurance measures were implemented, alternative interpretations of the evidence are possible. The findings should be understood as one analysis of research gaps in these domains rather than a comprehensive or definitive assessment. Future research might usefully employ different methodological approaches or theoretical perspectives to examine these same domains, potentially generating different insights about research priorities and approaches.

## 7. Conclusion

In an era marked by rapid technological innovation, environmental uncertainty, and shifting geopolitical dynamics, the study of international relations faces unprecedented challenges. As artificial intelligence (AI) transforms the nature of strategic competition, climate change reshapes the contours of security and cooperation, digital sovereignty emerges as a central concern for developing nations, and hybrid warfare expands the role of non-state actors, traditional frameworks for understanding global affairs are increasingly insufficient. These developments demand new approaches to both academic research and policy analysis.

This paper presents a qualitative analysis of critical research gaps across four domains: AI governance and global power dynamics, climate security and interstate conflict, digital sovereignty in the Global South, and hybrid warfare involving non-state actors. By systematically examining these areas, the study highlights the limitations of established theories and underscores the need for methodological innovation and interdisciplinary collaboration. The findings offer insights into the evolving landscape of international relations scholarship and provide recommendations for bridging the gap between academic inquiry and policy relevance.

### 7.1. Summary of Findings

This research paper has presented a comprehensive qualitative analysis of research gaps in four critical domains of international relations scholarship: AI governance and global power dynamics, climate security and interstate conflict, digital sovereignty in the Global South, and non-state actors in hybrid warfare. The analysis reveals that traditional theoretical frameworks—including realism, liberalism, and constructivism—face significant limitations in addressing the distinctive

characteristics of these emerging challenges. These limitations concern fundamental concepts including power, agency, sovereignty, and the boundaries of the international system, suggesting the need for theoretical innovation rather than merely incremental extension of existing approaches.

Across all four domains, the analysis identifies specific research gaps that require attention. In AI governance, existing frameworks inadequately address how AI reshapes power distribution, alliance structures, and security dynamics. In climate security, scholarship lacks robust frameworks linking environmental stress to interstate outcomes and understanding climate cooperation as a security-building mechanism. In digital sovereignty, Western-centric theories fail to capture the perspectives and strategies of Global South countries navigating digital dependency. In hybrid warfare, frameworks understate the role of non-state actors and the challenges they pose for traditional concepts of deterrence and attribution.

The analysis also identifies methodological and practical implications. Addressing research gaps in these domains requires interdisciplinary approaches, mixed methods, and creative solutions to data challenges. The disconnect between academic research and policy needs creates risks that should be addressed through better mechanisms for connecting scholarship to decision-making. The research contributes to ongoing discourse on advancing international relations scholarship by providing a systematic analysis of gaps and proposing frameworks for addressing them.

The field of international relations faces a critical moment in which established frameworks prove inadequate for emerging challenges while the need for evidence-based analysis has never been greater. The four research domains examined in this paper—AI governance, climate security, digital sovereignty, and hybrid warfare—represent interconnected challenges that demand new analytical approaches. By pursuing the research directions outlined here, scholars can contribute to both academic advancement and evidence-based policymaking in an increasingly complex international environment. The urgency of real-world implications, the potential for theoretical innovation, and the relevance for decision-makers all argue for prioritizing research in these domains.

The challenges facing the international community in the twenty-first century require scholarships that is theoretically innovative, methodologically rigorous, and policy relevant. Traditional approaches, while providing essential foundations, must be extended and adapted to address phenomena that challenge fundamental assumptions about power, sovereignty, and the nature of international relations. The recommendations presented in this paper offer a roadmap for advancing international relations scholarships to meet these challenges. Implementation of these recommendations will require commitment from individual scholars, academic institutions, funding agencies, and policy organizations. The stakes—for academic understanding and for global governance—make this effort worthwhile.

## 8. Recommendations for Future Research

Based on the analysis presented in this paper, several recommendations emerge for advancing international relations scholarship in these domains. First, the academic community should prioritize the development of new theoretical frameworks that can accommodate the complexities identified in this analysis. Such frameworks must address the nature of power in an era of technological transformation, the role of non-state actors in international relations, the integration of domestic and international levels of analysis, and the implications of environmental change for international order. Theoretical innovation should be recognized and rewarded in academic evaluation systems.

Second, interdisciplinary research should be actively promoted through funding mechanisms, institutional structures, and recognition systems. Research on AI governance should bring together political scientists, computer scientists, ethicists, and legal scholars. Climate security research requires collaboration between environmental scientists, economists, and security specialists. Digital sovereignty scholarship should involve technologists, legal experts, and development specialists alongside international relations scholars. Hybrid warfare research must integrate military affairs, cyber security, media studies, and political communication. Academic institutions should create structures that facilitate and reward such interdisciplinary collaboration.

Third, improved mechanisms for connecting academic research to policy needs should be developed. These mechanisms might include funding programs specifically for policy-relevant research, regular forums for engagement between researchers and policymakers, and recognition of policy impact in academic evaluation. Research outputs should be communicated in formats accessible to policy audiences, including policy briefs, executive summaries, and direct engagement with government and international organization officials. The goal should be to ensure that scholarly analysis informs policy decisions in these critical domains.

Fourth, data infrastructure should be developed to support research in these domains. Shared datasets on AI capabilities, climate stress indicators, digital policies, and hybrid warfare incidents would enable comparative research and enhance the rigor of analysis. Such infrastructure requires investment from funding agencies, collaboration among research institutions, and attention to ethical considerations around data collection and sharing. The development of such infrastructure should be a priority for the international relations research community.

Finally, greater attention should be devoted to perspectives and scholarship from the Global South. The analysis of digital sovereignty in particular revealed the limitations of Western-centric approaches and the value of engaging with non-Western perspectives. Research agendas should be developed in consultation with scholars and policymakers from diverse regions, and efforts should be made to include perspectives that dominant theoretical frameworks have historically marginalized. This inclusivity will enhance both the validity of research findings and the relevance of scholarship to global policy challenges.

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