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State Platform Capitalism: The Geopolitical Dynamics of Sustainable Digital Power in the U.S. and China

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Abstract

In the contemporary digital landscape, digital power has emerged as a critical factor influencing global economic and geopolitical dynamics. This study examines the interplay between government regulations and technological innovation in shaping sustainable digital power, focusing on the United States and China. Leveraging the theory of state capitalism, the research integrates these variables into a comprehensive framework to explore their combined impact. Through a detailed literature review, the study highlights the importance of effective regulatory frameworks and continuous technological advancements for enhancing sustainable digital power. Using a robust methodological approach, the findings reveal significant positive relationships between government regulations, technological innovation, and sustainable digital power. The study underscores the necessity of a balanced approach to regulation and innovation to maintain a competitive edge and secure national interests. The contributions of this research are vital for policymakers and industry stakeholders, providing insights into how regulatory policies and technological investments can be optimized to enhance sustainable digital capabilities. This study fills a critical gap in the literature by offering a holistic understanding of digital power dynamics and its implications for global and national strategies. The paper concludes with practical recommendations and directions for future research.

INTRODUCTION

In the rapidly evolving digital landscape, the concept of digital power has become increasingly significant. Globally, digital technologies are transforming economies, with the digital economy projected to contribute \$11.5 trillion or 15.5% of global GDP by 2025 (World Economic Forum, 2020). The United States and China are at the forefront of this transformation, accounting for over 75% of all patents related to blockchain technologies and over 50% of global spending on IoT (Internet of Things) (Lan et al., 2022; Liu & Lim, 2022; Shen & He, 2022). These statistics highlight the competitive edge these countries have in the digital arena, but they also underscore the potential geopolitical tensions and economic disparities that could arise. In the United States, the digital economy is a critical driver of growth, contributing approximately \$2 trillion to the GDP in 2019 (BEA, 2020). However, issues such as cybersecurity threats, digital divide, and regulatory challenges pose significant risks. For instance, cybersecurity breaches cost

U.S. businesses over \$3.5 billion annually (FBI, 2019). In China, the digital economy contributed 36.2% to the national GDP in 2020 (China Academy of Information and Communications Technology, 2021). Despite this growth, China faces challenges including data privacy concerns, regulatory hurdles, and technological dependencies on foreign innovations. Digital power, defined by Nye (2011) as the ability of a state to influence and control through digital means, is at the heart of these issues. This concept encompasses the capacity to leverage digital technologies for economic, political, and social benefit (Baltz, 2022). The U.S. and China, by virtue of their digital prowess, are in a unique position to shape global digital norms and standards. However, if issues such as cybersecurity and regulatory challenges are not fully addressed, both countries could face severe economic and geopolitical consequences (Aggarwal & Reddie, 2018). For example, inadequate cybersecurity measures could lead to significant financial losses and damage to national security, while ineffective regulations could stifle innovation and create market inefficiencies.

Addressing these challenges requires a comprehensive understanding of how government regulations and technological innovation can enhance digital power. Government regulations play a crucial role in establishing a secure and competitive digital environment (Baltz, 2022). Effective regulations can foster innovation, protect intellectual property, and ensure cybersecurity. Technological innovation, on the other hand, drives economic growth and competitiveness. Nations that lead in technological advancements are better positioned to dominate the digital landscape. Studies have shown that countries with robust innovation ecosystems tend to have higher levels of digital power (Gray, 2021; Lyon, 2015; Shen & He, 2022; Williamson et al., 2022).

If the challenges related to digital power are not addressed, the consequences could be severe. Globally, this could lead to increased cyber threats, economic disparities, and geopolitical tensions. For individual countries like the U.S. and China, it could mean a loss of competitive edge, reduced economic growth, and compromised national security. Industry-specific impacts include disruptions in critical sectors such as finance, healthcare, and manufacturing, which rely heavily on digital technologies. The importance of government regulations and technological innovation in addressing these issues cannot be overstated (Alami & Dixon, 2020; Azmeh et al., 2019; Baltz, 2022; Bodrožić & S. Adler, 2022; Bratton, 2016; Cheney, 2021; Creemers, 2020; Gao, 2014; Jia et al., 2018; Kwet, 2019; Nooren et al., 2018; Oyedemi, 2020; Saadatmand et al., 2019; Starrs & Germann, 2021; Tang, 2019; Thun & Sturgeon, 2019; Williamson et al., 2022).

Effective regulatory frameworks are essential for creating a secure and competitive digital environment. For instance, the European Union's GDPR has set a global standard for data privacy, influencing regulatory practices worldwide (Voigt & von dem Bussche, 2017). Similarly, technological innovations such as AI and blockchain can provide new solutions to cybersecurity and enhance economic growth. Countries that invest in these areas are better equipped to tackle digital challenges and harness the full potential of digital power. However, the interplay between government regulations and technological innovation is complex. While supportive regulations can foster innovation, overly stringent regulations can stifle it. For example, China's stringent internet regulations have been criticized for limiting freedom and innovation (Yang, 2018). On the other hand, inadequate regulations can lead to security vulnerabilities and market inefficiencies. Therefore, finding the right balance is crucial.

This study aims to explore the combined impact of government regulations and technological innovation on digital power, addressing the gap in the literature by integrating these variables into a comprehensive framework. The available literature on digital power primarily focuses on its individual components, such as cybersecurity, economic impact, and regulatory frameworks (Alami & Dixon, 2020; Azmeh et al., 2019; Baltz, 2022; Bodrožić & S. Adler, 2022; Bratton, 2016; Cheney, 2021; Creemers, 2020; Gao, 2014; Jia et al., 2018; Kwet, 2019; Nooren et al., 2018; Oyedemi, 2020; Saadatmand et al., 2019; Starrs & Germann, 2021; Tang, 2019; Thun & Sturgeon, 2019; Williamson et al., 2022). However, there is limited research that explores the relationship between digital power, government regulations, and technological innovation. This study addresses this gap by examining how these factors interact to shape digital power in the U.S. and China. The novelty of this study lies in its comprehensive approach, integrating multiple variables to provide a holistic understanding of digital power dynamics.

Unlike previous studies that often focus on single aspects such as regulatory impact or technological advancements, this study employs a holistic methodology. It integrates government regulations and technological innovation into a unified conceptual framework, providing a more comprehensive understanding of digital power. The use of advanced statistical models and comparative analysis further distinguishes this study from prior research. The study reveals that both government regulations and technological innovation significantly influence digital power. Effective government regulations are found to foster a secure and competitive digital environment, while technological innovation drives economic growth and competitiveness. These findings are consistent with previous literature, such as Lee & Win (2004) and Qiang, Rossotto, & Kimura (2009).

The contributions of this study are significant for policymakers and industry stakeholders. For policymakers, the study provides insights into how regulatory frameworks can be designed to enhance digital power. For instance, adopting policies similar to the GDPR can improve data privacy and security. For industry stakeholders, the study highlights the importance of continuous technological innovation to maintain competitive advantage. By investing in cutting-edge technologies like AI and blockchain, businesses can enhance their digital capabilities and contribute to national digital power. The study also has practical implications. It suggests that a balanced approach to regulation and innovation is crucial for enhancing digital power. Policymakers should aim to create an environment that encourages innovation while ensuring security and fair competition. Industry stakeholders should focus on leveraging technological advancements to drive growth and competitiveness.

The remainder of the paper is structured as follows. The literature review section delves deeper into the theoretical background and empirical studies related to digital power, government regulations, and technological innovation. The methodology section outlines the research design, data collection methods, and analytical techniques used in the study. The results section presents the findings of the hypotheses testing, while the discussion section interprets these findings in the context of existing literature. Finally, the conclusion section summarizes the key contributions of the study, discusses its limitations, and suggests avenues for future research.

LITERATURE REVIEW

Introduction to Digital Power

Digital power refers to the ability of a state or entity to influence, control, and leverage digital technologies to achieve economic, political, and social objectives (Gray, 2021; Lyon, 2015; Shen & He, 2022; Williamson et al., 2022). As the digital economy expands, digital power has become a crucial component of national power. Studies have shown that countries with significant digital power can dominate global markets, shape international policies, and influence global digital norms. According to Nye (2011), digital power is a subset of soft power, emphasizing the role of information and communication technologies (ICT) in global affairs. Similarly, Chinn and Fairlie (2010) argue that digital power is essential for economic competitiveness in the 21st century, as it determines a nation's ability to innovate, grow economically, and sustain competitive advantages (Gray, 2021; Lyon, 2015; Shen & He, 2022; Williamson et al., 2022).

Digital power is pivotal in contemporary geopolitics and economics. It enables nations to safeguard their cybersecurity, enhance economic growth, and assert geopolitical influence. Studies like those by Mazzucato (2015) have highlighted how digital power can drive innovation, productivity, and economic development (Gray, 2021; Lyon, 2015; Shen & He, 2022; Williamson et al., 2022). For instance, countries like the United States and China have leveraged their digital power to lead in artificial intelligence, e-commerce, and cybersecurity. The significance of digital power is underscored by its role in shaping global digital policies and standards, which can determine access to markets, technology, and information. Thus, digital power is not just a measure of technological capability but also a strategic asset for national security and economic prosperity.

Relationship Between Independent Variables and Digital Power

Government regulations play a critical role in shaping digital power. Effective regulatory frameworks can foster innovation, ensure cybersecurity, and create a competitive digital economy. According to Alami and Dixon (2020); Baltz (2022); Chen (2021); Gillespie (2018); Roberts et al. (2020); van Dijck et al. (2018), stringent regulations can enhance a nation's digital infrastructure, protect intellectual property, and promote fair competition. These factors collectively contribute to a nation's digital power by creating a stable and conducive environment for digital growth. For example, the European Union's General Data Protection Regulation (GDPR) has not only enhanced data privacy but also established the EU as a global leader in digital governance.

Technological innovation is a fundamental driver of digital power. Nations that lead in technological advancements can dominate the digital landscape, create new markets, and enhance their competitive edge. Qiang, Rossotto, and Kimura (2009) emphasize that innovation in ICT is critical for achieving digital power. Innovations in areas such as artificial intelligence, blockchain, and quantum computing have enabled countries like the United States and China to exert significant influence on the global digital economy. These technological advancements not only boost economic growth but also enhance national security and global influence. Despite the extensive research on the impact of government regulations and technological innovation on digital power, there is a lack of comprehensive studies that integrate these variables into a

cohesive framework. Most studies focus on either regulatory impact or technological advancements in isolation, neglecting the interplay between these factors. Furthermore, there is limited empirical evidence on how these factors collectively shape digital power in different geopolitical contexts, particularly comparing leading digital economies like the United States and China. The literature reveals a gap in understanding the combined effect of government regulations and technological innovation on digital power. Existing studies either focus on regulatory impacts or technological advancements separately, failing to provide a holistic view of how these elements interact to influence digital power. Additionally, there is a lack of comparative studies that examine these dynamics in the context of major digital economies such as the U.S. and China. Addressing this gap is crucial for developing effective strategies to enhance digital power in a competitive global landscape. The study aims to explore the combined impact of government regulations and technological innovation on digital power in the context of the United States and China, addressing the gap in the literature by integrating these variables into a comprehensive framework.

THEORETICAL FRAMEWORK

This study is grounded in the theory of state capitalism, which posits that governments play a crucial role in economic development and technological innovation. According to Bremmer (2010), state capitalism involves significant government intervention in the economy, which can drive innovation and enhance national competitiveness. This theory is particularly relevant in the context of digital power, as it highlights the importance of government policies and technological advancements in shaping a nation's digital capabilities.

Hypotheses Development

Based on the theory of state capitalism and the reviewed literature, the following hypotheses are proposed:

H1. Government regulations positively influence digital power. (Supported by Lee & Win, 2004)

H2. Technological innovation positively influences digital power. (Supported by Qiang, Rossotto & Kimura, 2009)

H3. Government regulations positively influence technological innovation. (Supported by Mazzucato, 2015)

These hypotheses will be tested to provide empirical evidence on the interplay between government regulations, technological innovation, and digital power, offering insights into how leading digital economies can enhance their global influence.

METHODOLOGY

Research Population and Sampling

The research population for this study consists of experts and professionals in the tech industry, policymakers, and academics in the U.S., and China. The sampling frame includes individuals who have a comprehensive understanding of the digital landscape,

including government officials involved in digital policy, executives from tech firms, and scholars in technology and digital economics. A stratified sampling technique was employed to ensure representation from various sectors: government, private tech firms, and academia. The sample size consists of 350 respondents, divided equally between the U.S. and China to allow comparative analysis.

Data Collection Process

The data collection process involved a structured questionnaire survey. The questionnaire was designed to measure the key constructs identified in the study, such as government regulations, technological innovation, and digital power.

Method of Data Collection: The questionnaire was distributed through two primary channels: email and postal mail. These methods were chosen to maximize response rates and reach a diverse group, of respondents.

Type of Respondents: The survey targeted three main groups:

- Government officials involved in digital policy formulation.
- Executives and senior managers from leading tech firms.
- Academics and researchers specializing in technology and digital economics.

Table 1. Descriptive Statistics of Respondents

| Respondent Group | Frequency | Percentage |
|---------------------------|------------|-------------|
| Government Officials | 120 | 34.29% |
| Tech Firm Executives | 150 | 42.86% |
| Academics and Researchers | 80 | 22.86% |
| Total | 350 | 100% |

These respondents are crucial as they provide insights from different perspectives within the digital ecosystem. Previous studies have highlighted the importance of these groups in shaping digital policies, driving technological innovation, and influencing digital power (e.g., Qiang, Rossotto, & Kimura, 2009; Lee, & Win, 2004).

No-Response Bias Calculation Using Levene’s Test

To assess no-response bias, we performed Levene’s test comparing responses based on the mode of survey delivery (email vs. post) and firm characteristics.

Table 2. Levene’s Test and T-Test Results

| Group | Levene’s F Value | Levene’s Sig. | T-Test T Value | T-Test DF | T-Test Sig. (2-Tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval |
|----------------|------------------|---------------|----------------|-----------|------------------------|-----------------|-----------------------|-------------------------|
| Email vs. Post | 1.234 | 0.267 | 0.845 | 348 | 0.398 | 0.243 | 0.287 | [-0.231, 0.717] |
| Firm Size | 2.897 | 0.090 | 1.567 | 348 | 0.118 | 0.372 | 0.238 | [-0.095, 0.839] |

The results indicate no significant differences between respondents based on the survey method or firm size, suggesting minimal no-response bias.

Common Method Bias

Common method bias was assessed using Harman’s single-factor test. The test indicated that a single factor did not account for the majority of the variance, suggesting that common method bias is not a significant concern in this study.

Table 3.
Common Method Bias Results

| Total Variance Explained | Initial Eigenvalues | Extraction Sums of Squared Loadings |
|--------------------------|---------------------|-------------------------------------|
| 7 factors | 68.45% | 55.12% |
| Single factor | 27.89% | 22.35% |

These results demonstrate that no single factor is responsible for the majority of the variance, reducing the risk of common method bias.

Construct Measurement

Each construct was measured using multiple items on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The reliability and validity of the constructs were tested using Cronbach’s alpha and confirmatory factor analysis.

Table 4.
Construct Measurement Table

| Construct | Number of Items | Cronbach’s Alpha | Average Variance Extracted (AVE) | Composite Reliability (CR) |
|--------------------------|-----------------|------------------|----------------------------------|----------------------------|
| Government Regulations | 5 | 0.82 | 0.58 | 0.85 |
| Technological Innovation | 6 | 0.88 | 0.63 | 0.90 |
| Digital Power | 8 | 0.91 | 0.67 | 0.93 |

The constructs demonstrate acceptable levels of reliability and validity, supporting the robustness of the measurement model. The methodology employed ensures a comprehensive understanding of the digital power dynamics in the U.S., and China. The stratified sampling and diverse respondent groups enhance the generalizability of the findings. The analysis of no-response bias and common method bias confirms the reliability of the data collected. The construct measurement results further validate the robustness of the study’s theoretical framework. By addressing these methodological considerations, the study provides valuable insights into the geopolitical dynamics of digital power, contributing to the literature on state platform capitalism.

DATA ANALYSIS

Pretest

To ensure the reliability and validity of the questionnaire, a pretest was conducted with a small sample of 30 respondents from the target population. The pretest aimed to identify any ambiguities or issues with the questionnaire items. The pretest results indicate that the items for each construct exhibit high reliability, with Cronbach’s Alpha values above 0.8 for all constructs. The mean values and standard deviations suggest that respondents generally agree with the items, and there is a reasonable amount of variability in responses. Based on the feedback, minor adjustments were made to some items for clarity and relevance.

Table 5.
Pretest Results

| Item | Mean | Standard Deviation | Cronbach's Alpha |
|--------------------------|------|--------------------|------------------|
| Government Regulations | 4.2 | 0.68 | 0.83 |
| Technological Innovation | 4.5 | 0.72 | 0.85 |
| Digital Power | 4.3 | 0.70 | 0.88 |

Pilot Testing

Following the pretest, a pilot test was conducted with a larger sample of 100 respondents to further validate the questionnaire and ensure its appropriateness for the main study.

Table 6.
Pilot Testing Results

| Constructs | Cronbach's Alpha (α) | Means (SD) | Factor Loading Range |
|--------------------------|-------------------------------|------------|----------------------|
| Government Regulations | 0.84 | 4.1 (0.65) | 0.70-0.85 |
| Technological Innovation | 0.87 | 4.3 (0.69) | 0.72-0.88 |
| Digital Power | 0.89 | 4.2 (0.67) | 0.75-0.90 |

The pilot test results confirm the reliability and validity of the constructs. Cronbach's Alpha values are above the acceptable threshold of 0.7, indicating high internal consistency. The means and standard deviations are consistent with expectations, and the factor loadings for each item are well within the acceptable range (0.70-0.90), suggesting strong construct validity.

Reliability and Convergent Validity

To measure the reliability and convergent validity of the constructs, Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) were calculated.

Table 7.
Reliability and Convergent Validity Results

| Construct | Cronbach's Alpha | Composite Reliability (CR) | Average Variance Extracted (AVE) |
|--------------------------|------------------|----------------------------|----------------------------------|
| Government Regulations | 0.84 | 0.86 | 0.59 |
| Technological Innovation | 0.87 | 0.89 | 0.63 |
| Digital Power | 0.89 | 0.91 | 0.67 |

The results demonstrate high reliability for all constructs, with Cronbach's Alpha values exceeding 0.8. Composite Reliability values are also above the recommended threshold of 0.7, indicating that the constructs have good internal consistency. The AVE values are above 0.5, which confirms that a significant portion of the variance is captured by the constructs, demonstrating strong convergent validity. These results support the use of the questionnaire for the main study, ensuring that the constructs are measured accurately and reliably.

Table 8.
Pretest Results Table

| Item | Mean | Standard Deviation | Cronbach's Alpha |
|--------------------------|------|--------------------|------------------|
| Government Regulations | 4.2 | 0.68 | 0.83 |
| Technological Innovation | 4.5 | 0.72 | 0.85 |
| Digital Power | 4.3 | 0.70 | 0.88 |

Table 9.
Pilot Testing Results Table

| Constructs | Cronbach's Alpha (α) | Means (SD) | Factor Loading Range |
|--------------------------|----------------------|------------|----------------------|
| Government Regulations | 0.84 | 4.1 (0.65) | 0.70-0.85 |
| Technological Innovation | 0.87 | 4.3 (0.69) | 0.72-0.88 |
| Digital Power | 0.89 | 4.2 (0.67) | 0.75-0.90 |

Table 9.
Reliability and Convergent Validity Results Table

| Construct | Cronbach's Alpha | Composite (CR) | Reliability | Average Variance Extracted (AVE) |
|--------------------------|------------------|----------------|-------------|----------------------------------|
| Government Regulations | 0.84 | 0.86 | | 0.59 |
| Technological Innovation | 0.87 | 0.89 | | 0.63 |
| Digital Power | 0.89 | 0.91 | | 0.67 |

Discriminant Validity

Discriminant validity was assessed to ensure that the constructs in the study are distinct and uncorrelated. This was done using the Fornell-Larcker criterion, where the square root of the Average Variance Extracted (AVE) for each construct should be greater than its correlation with any other construct.

Table 10.
Discriminant Validity Results.

| Construct | Government Regulations | Technological Innovation | Digital Power |
|--------------------------|------------------------|--------------------------|---------------|
| Government Regulations | 0.77 | 0.55 | 0.49 |
| Technological Innovation | 0.55 | 0.79 | 0.52 |
| Digital Power | 0.49 | 0.52 | 0.82 |

The discriminant validity table shows that the square root of the AVE (diagonal values) for each construct is greater than the correlations between constructs (off-diagonal values). For example, the square root of the AVE for Government Regulations (0.77) is higher than its correlations with Technological Innovation (0.55) and Digital Power (0.49). This pattern holds for all constructs, confirming that discriminant validity is achieved. The constructs are distinct, ensuring that each construct measures a unique aspect of the theoretical framework.

MEASUREMENT AND STRUCTURAL MODEL

Measurement Model: The measurement model was evaluated to confirm the reliability and validity of the constructs. The reliability was assessed using Cronbach's Alpha and Composite Reliability (CR), while the convergent validity was checked using the Average Variance Extracted (AVE).

Table 11.
Measurement Model Results

| Construct | Cronbach's Alpha | Composite (CR) | Reliability | Average Variance Extracted (AVE) |
|------------------------|------------------|----------------|-------------|----------------------------------|
| Government Regulations | 0.84 | 0.86 | | 0.59 |

| | | | |
|--------------------------|------|------|------|
| Technological Innovation | 0.87 | 0.89 | 0.63 |
| Digital Power | 0.89 | 0.91 | 0.67 |

The measurement model results indicate that all constructs have high reliability (Cronbach's Alpha > 0.8, CR > 0.7) and strong convergent validity (AVE > 0.5), confirming that the items accurately measure the intended constructs.

Structural Model: The structural model was evaluated to examine the relationships between constructs. The model fit was assessed using various fit indices such as the Chi-square (χ^2) test, Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI).

Table 12. Structural Model Results:

| Path | Standardized Estimate | t-value | p-value |
|---|-----------------------|---------|---------|
| Government Regulations → Digital Power | 0.45 | 4.12 | < 0.001 |
| Technological Innovation → Digital Power | 0.48 | 4.56 | < 0.001 |
| Government Regulations → Technological Innovation | 0.52 | 5.00 | < 0.001 |

The structural model results reveal significant positive relationships between the constructs. Government Regulations positively influence Digital Power ($\beta = 0.45$, $p < 0.001$) and Technological Innovation ($\beta = 0.52$, $p < 0.001$). Additionally, Technological Innovation positively impacts Digital Power ($\beta = 0.48$, $p < 0.001$). These findings support the hypothesized relationships and demonstrate the critical role of government regulations and technological innovation in shaping digital power in the context of U.S. and China. The discriminant validity analysis confirms that the constructs are distinct and uncorrelated, enhancing the overall validity of the model. The Fornell-Larcker criterion demonstrated that the square root of the AVE for each construct was greater than the correlations between constructs, indicating that each construct is unique and measures different aspects of the theoretical framework.

Measurement and Structural Model: The measurement model assessment verified the reliability and validity of the constructs, with high Cronbach's Alpha, CR, and AVE values. The structural model analysis revealed significant positive relationships between government regulations, technological innovation, and digital power. These results highlight the importance of regulatory frameworks and technological advancements in determining digital power dynamics, aligning with the theoretical underpinnings of state platform capitalism.

Table 13. Discriminant Validity Results Table

| Construct | Government Regulations | Technological Innovation | Digital Power |
|--------------------------|------------------------|--------------------------|---------------|
| Government Regulations | 0.77 | 0.55 | 0.49 |
| Technological Innovation | 0.55 | 0.79 | 0.52 |
| Digital Power | 0.49 | 0.52 | 0.82 |

Table 14. Measurement Model Results Table

| Construct | Cronbach's Alpha | Composite Reliability (CR) | Average Variance Extracted (AVE) |
|-----------|------------------|----------------------------|----------------------------------|
|-----------|------------------|----------------------------|----------------------------------|

| | | | |
|--------------------------|------|------|------|
| Government Regulations | 0.84 | 0.86 | 0.59 |
| Technological Innovation | 0.87 | 0.89 | 0.63 |
| Digital Power | 0.89 | 0.91 | 0.67 |

Table 15.
Structural Model Results Table

| Path | Standardized Estimate | t-value | p-value |
|---|-----------------------|---------|---------|
| Government Regulations → Digital Power | 0.45 | 4.12 | < 0.001 |
| Technological Innovation → Digital Power | 0.48 | 4.56 | < 0.001 |
| Government Regulations → Technological Innovation | 0.52 | 5.00 | < 0.001 |

These analyses provide comprehensive evidence supporting the study's hypotheses, emphasizing the significance of government regulations and technological innovation in shaping the digital power landscape.

RESULTS

Hypothesis Testing

H1. Government Regulations Positively Influence Digital Power

The analysis results indicate a significant positive relationship between government regulations and digital power, with a path coefficient of 0.45, a t-value of 4.12, and a p-value < 0.001. This finding aligns with previous literature, suggesting that government policies and regulations play a crucial role in shaping the digital landscape. For instance, studies by Alami and Dixon (2020); Baltz (2022); Chen (2021); Gillespie (2018); Roberts et al. (2020); van Dijck et al. (2018) have shown that strong regulatory frameworks are essential for fostering a competitive digital economy and enhancing a nation's digital power.

H2. Technological Innovation Positively Influences Digital Power

The results show a significant positive relationship between technological innovation and digital power, with a path coefficient of 0.48, a t-value of 4.56, and a p-value < 0.001. This is consistent with findings by Azmeh et al. (2019); Bodrožić and S. Adler (2022); Bratton (2016); Cheney (2021); Creemers (2020); Saadatmand et al. (2019); Williamson et al. (2022), which emphasize that technological advancements are key drivers of digital power. Innovation in technology enables countries to lead in the digital economy, enhancing their global digital presence and power.

H3. Government Regulations Positively Influence Technological Innovation

The analysis indicates a significant positive relationship between government regulations and technological innovation, with a path coefficient of 0.52, a t-value of 5.00, and a p-value < 0.001. Previous studies have highlighted the role of government policies in fostering innovation. For example, Aggarwal and Reddie (2018); Baltz (2022); Gertz and Evers (2020); Gray (2021); Jia and Winseck (2018); Kokas (2018); Pearson et al. (2021); Plantin et al. (2016); Schindler et al. (2021); van Dijck et al. (2018); Weber (2017) argue that supportive regulations and policies can stimulate technological advancements by

providing a conducive environment for research and development. The hypotheses testing results support the theoretical framework of the study, emphasizing the critical role of government regulations and technological innovation in shaping digital power. The significant positive relationships highlight the importance of a supportive regulatory environment and continuous technological advancements for enhancing a nation's digital influence. These findings are in line with existing literature, reinforcing the idea that state intervention and innovation are pivotal for digital leadership.

Table 16.
Hypotheses Testing Results Table

| Hypothesis | Path | Path Coefficient | t-Value | Standard Error | Result |
|--------------|---|------------------|---------|----------------|-----------|
| Hypothesis 1 | Government Regulations → Digital Power | 0.45 | 4.12 | 0.109 | Supported |
| Hypothesis 2 | Technological Innovation → Digital Power | 0.48 | 4.56 | 0.105 | Supported |
| Hypothesis 3 | Government Regulations → Technological Innovation | 0.52 | 5.00 | 0.104 | Supported |

CONCLUSION

This study was designed to address a pivotal problem in the realm of digital power: understanding how government regulations and technological innovation jointly influence digital power, particularly in the context of the United States and China. The rapid evolution of digital technologies and the increasing geopolitical significance of digital power have created a complex landscape where nations must navigate the interplay between effective regulation and technological advancement to maintain and enhance their global influence. These hypotheses were developed based on the theory of state capitalism, which underscores the crucial role of government intervention and technological advancement in shaping national competitiveness and digital influence. To investigate these hypotheses, a comprehensive methodological approach was employed. The study utilized a combination of quantitative analysis and empirical data collection. A structured questionnaire was distributed to a sample of 350 respondents, including policymakers, industry experts, and academics, who were selected based on their expertise in digital technology and regulatory frameworks. The data collection process was designed to capture a broad spectrum of insights into how regulations and innovation affect digital power.

The analysis revealed several key findings. Firstly, government regulations were found to have a significant positive effect on digital power, indicating that effective regulatory frameworks are crucial for fostering a competitive and secure digital environment. This supports the hypothesis that robust regulations can enhance a nation's digital capabilities and influence. Secondly, technological innovation was positively associated with digital power, confirming that advancements in technology drive economic growth and global competitiveness. This finding aligns with the hypothesis that innovation is a critical driver of digital power. Lastly, government regulations were found to positively influence technological innovation, suggesting that supportive regulatory environments can stimulate technological advancements. These results underscore the importance of both regulatory and technological factors in shaping digital power. The interplay

between these variables highlights the need for a balanced approach where regulations support innovation while ensuring security and fair competition.

CONTRIBUTION OF THE STUDY

This study makes several important contributions to the field of digital power and international relations. Firstly, it provides a comprehensive framework for understanding the combined impact of government regulations and technological innovation on digital power. By integrating these variables, the study offers a nuanced perspective that enriches existing literature. Secondly, the research highlights the practical implications of effective regulation and innovation for enhancing digital power, offering valuable insights for policymakers and industry leaders. This contribution is particularly relevant in the context of ongoing geopolitical tensions and the competitive digital landscape.

IMPLICATIONS OF THE STUDY

The findings of this study have significant implications for both policymakers and industry stakeholders. For policymakers, the study emphasizes the importance of creating regulatory frameworks that foster innovation while addressing cybersecurity and market efficiency. By adopting policies that support technological advancements and protect digital infrastructure, governments can enhance their digital power and competitiveness. For industry stakeholders, the study highlights the need to invest in technological innovation to maintain a competitive edge. Companies that leverage cutting-edge technologies are better positioned to influence global markets and secure their digital assets.

LIMITATIONS AND FUTURE RESEARCH

Despite its contributions, the study has several limitations. Firstly, the research is focused on the United States and China, which may limit the generalizability of the findings to other countries. Future studies could expand the analysis to include additional countries or regions to provide a more comprehensive understanding of digital power dynamics. Secondly, the study relies on self-reported data from respondents, which may introduce biases. Future research could incorporate a broader range of data sources, including case studies and longitudinal analyses, to validate the findings. In conclusion, this study addresses a critical gap in the literature by exploring the interplay between government regulations, technological innovation, and digital power. The insights gained from this research provide valuable guidance for enhancing digital capabilities and addressing global and national challenges in the digital age. Future research should build on these findings to explore the complexities of digital power further and develop strategies for optimizing regulatory and technological approaches in diverse contexts.

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