

The Influence of Economic Intelligence Capabilities on Economic Security in Ghana

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Abstract

Threats to economic security have surged, prompting nations to prioritize economic intelligence sharing. Ghana has grappled with economic security challenges from the post-2008 global economic downturn and the aftermath of the COVID-19 pandemic in 2022, leading its government to ramp up economic intelligence efforts. Research conducted on the implications of economic intelligence sharing and economic security in Ghana sought to analyse the essential components of economic intelligence crucial for enhancing economic security, examine the interplay between economic intelligence and economic security, and assess the impact of economic intelligence capabilities on economic security in Ghana. The study, which was a cross-sectional survey in design, was anchored on economic security theory, just intelligence theory, and general systems theory. The target population was 1,168 officers from the government and an NGO. Out of this population, a sample size of 298 officers was purposively selected to participate in the study. Data were collected by questionnaires and key informant interviews. Quantitative and qualitative data were analysed using ordinal logistic regression and thematic analysis, respectively. From the findings, ordinal logistic regression revealed that financial capacity ($\beta = 1.43$, $p < 0.001$, OR = 3.18) and technical capacity ($\beta = 0.68$, $p = 0.024$, OR = 1.98) significantly influenced economic security, while political capital ($\beta = 0.18$, $p = 0.058$) was not significant. This paper is a detailed presentation of the study findings on the influence of economic intelligence capabilities on economic security in Ghana.

Keywords

Economic Intelligence Capabilities, Economic Security, Ghana

1. Introduction

Nations are increasingly expanding their national security strategies beyond hith-

erto traditional considerations. Contemporary national security contemplations extend beyond individual and military considerations to encompass economic security and diplomatic dimensions. Economic security involves safeguarding against disruptions that could jeopardize people's livelihoods and their ability to fulfill basic needs, aiming to protect economic assets. Similar to other security domains, intelligence plays a crucial role in economic security. Economic intelligence is widely acknowledged as a valuable tool for state management, drawing on strategic information expertise for activities like data collection and analysis to enhance understanding of the global landscape (Revel, 2010). The application of intelligence has proven instrumental in addressing contemporary threats and vulnerabilities arising from shifts in the international economic arena.

Globally, economic intelligence plays a vital role in ensuring economic security. It is achieved through diverse methods, such as gathering data on economic activities like investment flows, trade patterns, and market trends. In the United States of America (USA), DeConcini (2014) reports a heightened emphasis on the use of economic intelligence in supporting US commercial enterprises as they vie for global markets. According to the National Counterintelligence and Security Center's report (2018), the US has always bolstered its economic intelligence framework to fortify economic and national security in response to economic threats. It has utilized economic intelligence to identify potential economic risks from competitors like China, thus offering an advantage to American industries against economic espionage.

In Europe, countries have integrated economic intelligence into their national security strategies. France, for instance, established an economic and social council to drive the adoption of economic intelligence, thus aiding in understanding the emerging economic risks on the global stage. Ungureanu (2021) has attributed France's advanced economic intelligence capabilities to robust inter-institutional collaboration and investment in sound social policies. Similarly, in Japan, significant efforts have been made in economic intelligence collection both domestically and internationally, and business entities actively participate in economic intelligence activities. For example, organizations like the Chambers of Commerce and Industry (CCI) and private firms such as the ADIT group, Coface, and Afnor group in the country have engaged in information collection, analysis, and dissemination within the business landscape. Major Japanese corporations such as Hitachi, Mitsubishi, and others play a pivotal role in gathering economic intelligence in collaboration with the Ministry of International Trade and Industry. These corporations leverage extensive corporate networks for intelligence gathering, while the Japan External Trade Organization also contributes to information collection. Notably, around ninety percent of intelligence gathered by Japanese industries pertains to economic intelligence driven by the need to bolster economic security. These robust economic intelligence engagements are perceived to be strategies to address economic insecurities and challenges such as illicit technology transfers and industrial espionage from other nations (Igara, 2022).

In South Asia and the Middle East, the link between economic intelligence and economic security has been established. In post-war Iraq, a lack of economic intelligence hindered the country's reconstruction efforts and economic stability, leading to increased conflicts and insecurity. For example, Iraq struggled to reopen its stock market due to an inadequate understanding of market dynamics and economic conditions in the region, with challenges such as unemployment further exacerbating political tensions (Susdarwono, 2019). In Indonesia, Anis and Susdarwono (2019) noted a focus on enhancing economic intelligence to bolster the national economy's resilience in the 21st century. The country's utilization of economic intelligence encompasses ecological, psycho-sociological, and technological skills, with a focus on understanding the business environment, internal organizational dynamics, and decision support tools, along with external human networks.

In most African nations, the relationship between economic intelligence and economic security has been acknowledged, yet the effectiveness of economic intelligence in enhancing economic security faces numerous challenges. African countries often struggle with underdeveloped economic intelligence capacities, which hinder their operational efficiency. Given the prevalence of economic instability globally and within the political landscape, robust intelligence systems are imperative in African countries. In many of these countries, inadequate funding emerges as a primary obstacle confronting intelligence agencies. Normally, the agencies receive less than 1% of national budgets, which is significantly below the global average of 2%. This funding shortfall limits their ability to acquire modern equipment and provide up-to-date training for intelligence personnel. Another challenge is a lack of cooperation and coordination among the agencies within and across countries, which impedes effective information sharing, thus hampering the detection of economic threats. These deficiencies in African nations' economic intelligence systems have contributed to the proliferation of economic and industrial espionage, thus posing substantial risks to economic security (Kitenge, 2023).

For instance, according to Dagada and Mukwevho (2013), the economic security of South Africa faces a significant threat from increased cases of industrial espionage because several entities use high technological tools available to illegally access business information from rivals. This has been worsened by the fact that various businesses in South Africa lack adequate security measures to safeguard their information. The utilization of information communication technologies and vulnerabilities in existing security protocols facilitates the theft of business data, which fosters an environment conducive to industrial espionage. The prevalence of industrial espionage in South Africa highlights the inadequacy of local corporate security frameworks in countering economic risks. A report by Ernst and Young (South Africa) in 2013 estimated that, due to industrial espionage, South African companies incur a substantial annual cost of 67 billion dollars. This underscores the severity of economic threats posed in the country at both local

and regional levels.

Ghana, as a country, has encountered significant economic challenges since the global financial crisis of 2008 (Srivastava & Pawlowaska, 2020). This has led to the systematic implementation of economic intelligence reforms through legislative measures, personnel training, and institutional enhancements. Recent government initiatives, such as the One District, One Factory Policy, Free Secondary School Education, and the implementation of the African Continental Free Trade Area (AFCFTA), aim to stimulate employment and economic growth for the enhancement of economic security. Further, Ghana has strategically integrated its economic intelligence services into the national security and budgetary frameworks to enhance the effectiveness of economic intelligence operations. The establishment of the National Intelligence Bureau (NIB) and the Research Department (RD) as internal and external intelligence agencies of the state was a deliberate step to conduct essential intelligence activities independent from the police and military. These measures are aimed at ensuring the efficient collection of precise and sufficient economic intelligence data.

However, assessments by the *Institute for Security Studies* (2022) indicate that Ghana's economic security remains precarious, prompting repeated engagements with the International Monetary Fund (IMF) for support in addressing economic challenges in the country. According to the *World Bank* (2017), Ghana suffered an economic crisis in 2017, resulting in a loss of \$6.3 billion, equivalent to 11% of the country's Gross Domestic Product (GDP). Additionally, a report by Bertelsmann Stiftung's Transformation Index (BTI) 2020 highlighted income insecurity as a prevalent economic issue in Ghana, citing substantial economic disparities that contribute to income gaps between urban and rural populations. Recent data from the *World Bank* (2023) further reveal that Ghana's economy plunged into a severe macroeconomic crisis in 2022 due to existing imbalances and external shocks.

Signe (2017) suggests that addressing economic development challenges and conflicts in Africa requires the implementation of economic intelligence-backed policies for regional security. This involves identifying key economic aspects influencing political outcomes and preparing for economic challenges and recovery. The Ghana situation prompts a critical inquiry into the impact of sharing economic intelligence on Ghana's economic security. Therefore, this study aimed to explore the implications of economic intelligence sharing on Ghana's economic security, focusing on the essential elements of economic intelligence in Ghana, its capabilities, and the resultant effects on economic stability.

2. Literature Review on Economic Intelligence Capability and Economic Security

Economic Intelligence capability refers to intelligence services' capacity to obtain and evaluate economic intelligence data. The technical capacity, institutional capacity, resources, tools and equipment, and training levels are all taken into consideration when determining intelligence capability's capacity to enhance eco-

conomic security.

According to a report by the Center for Strategic and International Studies (2020), emerging technologies in the United States are fundamentally altering how intelligence is gathered and the intelligence cycle itself. Technological capacity lies at the core of intelligence operations, with four key technological trends driving this transformation. The trends are the widespread use of multimodal sensors, advancements in artificial intelligence algorithms, improvements in artificial intelligence applications, and increased processing capabilities for data.

On the importance of economic intelligence systems in shaping responsible economic development plans in Poland, [Malecki \(2017\)](#) observed that there were technical and institutional deficiencies in economic intelligence capabilities in Poland compared to countries like Japan and France. Whereas the study focused on the link between economic intelligence systems and development plans, which were found to be more established and capable of enhancing economic security in both Japan and France as compared to Poland, it was primarily focused on Europe, where intelligence systems are distinct from those in Ghana. Additionally, the study did not delve into other aspects of economic intelligence, such as existing intelligence-gathering systems and strategies for enhancing intelligence capabilities to bolster economic security. This is a gap that the study on Ghana sought to address.

[Gilad, Pecht, and Tishier \(2019\)](#) examined intelligence gathering in cyberspace and its impact on national security in developed nations. The study focused on the reliance of modern economies on complex computer networks for managing various operations. It underscored the vulnerability of these networks to cyberattacks, which could significantly harm a country's economy and overall well-being. The study highlighted the critical role of quality human capital and military capacity in shaping the effectiveness of intelligence-gathering models and their implications for a country's economic welfare. While the research focused on developed countries with robust computer networks, the study on Ghana focused on an emerging economy. Unlike the previous study, which concentrated on a broad perspective of intelligence, the research narrowed its scope to economic intelligence and its impact on national security, with the aim of bridging these contextual gaps.

[Collier \(2020\)](#) delved into the security challenges faced by African nations and their preparedness to counter these threats. The study scrutinized the intelligence systems in place as a crucial component of response capacity. Security threats were assessed comprehensively, encompassing economic security elements like natural resource exploitation and human security concerns. Findings indicated that several African countries, including Mali, South Sudan, and the Central African Republic, lack sufficient intelligence and military capabilities. Conversely, countries like Nigeria and Kenya have bolstered their capacities through robust intelligence frameworks and military funding. The study advocated for increased intelligence-sharing cooperation and enhanced financing for intelligence operations. How-

ever, the study focused on a broad examination of security within the national security framework, rather than focusing solely on economic security. Additionally, the comparative nature of the study on different African countries detracted from a detailed analysis of a specific country's intelligence capabilities and their impact on economic security. The study in Ghana sought to address these gaps.

Njoroge (2020) investigated Kenya's utilization of intelligence data and analytics for national security purposes. The study employed an exploratory research design and regression analysis and established a statistically significant impact of analytics and big data on both the intelligence cycle and national security in Kenya. However, the study overlooked the role of big data and analytics in bolstering economic security. The scholar focused primarily on national security, particularly personal security, which is a broad concept. To bridge this gap, the study on Ghana concentrated on the correlation between economic intelligence capabilities and economic security in the country, shifting the focus to economic intelligence as the central theme.

Eshun (2022) on Ghana's intelligence-led security architecture focused on its role in ensuring long-term domestic stability. The scholar evaluated the relevance of the architecture, the capacity of national security institutions, and inter-agency intelligence coordination. The study established that Ghana's security architecture, particularly its intelligence framework, has been influenced by historical contexts, especially politics. It noted an evolution in intelligence capacity since Ghana's transition to democracy in 1992, with institutions gaining independence to fulfil their mandates. Regarding coordination, improvements were observed, exemplified by the successful containment of the 2008 tribal conflicts in Ghana's northern region. The scholar concluded that Ghana's intelligence architecture has significantly progressed. However, the lacuna in this study is that the researcher focused on intelligence architecture and capacity without delving into economic intelligence and its role in enhancing economic security in Ghana, which became the focus of the current study.

3. Theoretical Framework

The research was guided by three theories. These are Economic Security Theory, Just Intelligence Theory, and General Systems Theory. Economic Security Theory assisted the study in identifying the various Ghanaian government institutions concerned with economic security and enabled it to analyze their efforts to create and sustain economic security. Just Intelligence Theory assisted the study in analyzing the necessity of intelligence gathering and utilization in the enhancement of Ghanaian economic security, while General Systems Theory helped the study to analyze the synergy between various state institutions concerned with gathering, sharing, and implementation to ensure economic security in Ghana.

Economic security theory explores how nations and individuals maintain and strengthen their economic stability and resilience against potential disruptions. It encompasses various aspects, including the ability to meet basic needs, access to

essential resources, and protection against economic shocks, both internal and external (Noskov, 2021). The key pillars of economic security theory relevant to a nation-state such as Ghana are national economic security, economic resilience, and protection against external and internal threats.

According to Noskov (2021), national economic security focuses on a nation's ability to secure its interests, protect its citizens, and maintain stability through economic means. It involves ensuring access to essential goods and services, safeguarding the national economy from external threats, and maintaining a sustainable level of economic development. Economic resilience is about a nation's ability to withstand and recover from economic shocks or disruptions, such as recessions, financial crises, trade wars, and tariff sanctions. Protection against external threats concerns safeguarding the national economy from factors like trade imbalances, financial instability, or geopolitical tensions, while protection against internal threats involves addressing issues like income inequality, unemployment, and social unrest, which can undermine economic security (Inglehart & Abramson, 2013). All these are achieved through government policies that can sustain economic stability. This theory was employed by the study to identify the relevant government institutions concerned with these pillars and how they achieve these mandates.

The concept of just intelligence, developed by Mark Phythian and David Omand in 2018, draws parallels from the just war theory. Just Intelligence Theory posits that without intelligence, states would struggle to grasp the nature and severity of the threats they face. While acknowledging that intelligence gathering may sometimes infringe on individuals' or nations' privacy and autonomy, the theory emphasizes that a nation's understanding of potential threats is incomplete without intelligence. Just intelligence, as outlined in the theory, extends beyond national security intelligence to encompass counterintelligence (Miller, 2018). It asserts that states are ethically justified in collecting, analysing, and sharing intelligence when the primary objective is to mitigate security threats posed by other states or entities, and when intelligence is the last resort for addressing such threats (Diderichsen & Ronn, 2019).

In the concept of economic intelligence, states engage in gathering information on the economic activities of local and foreign entities within their borders and abroad on economic best practices and other policies that could pose significant economic risks. Economic intelligence efforts may involve actions that could be perceived as encroaching on another nation's sovereignty, but the overarching goal is to identify and mitigate economic threats posed by other countries. Therefore, this study posits that the just intelligence framework offers insights into how Ghana utilizes economic intelligence to bolster its economic security.

General systems theory (GST), which aimed at establishing how societies and organizations build and maintain stability to achieve constancy, originated from the works of Von Bertalanffy, among other scholars. It is a multi-disciplinary outline that examines how interconnected components form a whole system, and

how the system functions and evolves (Von Bertalanffy, 1972). Its key assumption is that each part of an organization works to ensure stability (Bernard, Paoline, & Pare, 2002). For this to occur, the theory posits that there has to be harmony and wide consensus among several components of the society and organization for it to achieve its goals and expectations. General systems theory posits that both society and organization are like a living organism with different body parts that play distinct roles for the benefit of the whole (Leighninger Jr., 1978).

Within the context of economic security in Ghana, General Systems Theory supposes that Ghana's security and intelligence agencies are made up of various institutions with distinct mandates, yet are interdependent and all aimed at ensuring economic security by means of gathering, sharing, and implementing economic intelligence. The institutions concerned are the Ministry of National Security (MNS), National Intelligence Bureau (NIB), Defence Intelligence (DI), National Signals Bureau (NSB), Research Department of the Ministry of Foreign Affairs and Regional Integration (RDMFA & RI), Ministry of Finance (MF), and West Africa Security and Intelligence Network (WASIN), an NGO.

In the context of this study, the above-mentioned agencies make up a comprehensive national security architecture and corporate entity, with each agency having distinct roles to play to ensure economic security in the country. Should any agency fail to deliver on its mandate, the country's economic security is likely to become unstable; therefore, all the institutions must work together and cooperate in sharing and implementing economic intelligence to accomplish economic and national security in Ghana. Therefore, the General Systems Theory assisted this study in understanding the coordination and cooperation involved in the work of the agencies concerned with economic intelligence and economic security in Ghana.

4. The Study Area and Methodology

The research was conducted in Ghana, specifically targeting agencies under the Ministry of National Security (MNS) and the West Africa Security and Intelligence Network (WASIN) Non-Governmental Organization located in Accra. Ghana was selected as the study site due to its economic security challenges since 2008. The study aimed to assess whether the current economic intelligence measures have effectively safeguarded economic security.

The study employed a cross-sectional survey design to gather information from different government departments. A cross-sectional survey design is suitable for collecting data from participants who are from different agencies at a single point in time. The design is also advantageous in evaluating multiple variables. The target population for this study comprised officers from the Ministry of National Security (MNS), National Intelligence Bureau (NIB), Defence Intelligence (DI), National Signals Bureau (NSB), Research Department of the Ministry of Foreign Affairs and Regional Integration (RDMFA & RI), Ministry of Finance (MF), and West Africa Security and Intelligence Network (WASIN), an NGO. These entities

in Accra serve as central repositories of national economic intelligence and information on economic security. **Table 1** shows the target population.

Table 1. Target population.

Category	Population	Proportion
Ministry of National Security (MNS)	187	16.01%
National Intelligence Bureau (NIB)	207	17.72%
Defence Intelligence (DI)	165	14.13%
National Signals Bureau (NSB)	144	12.33%
Research Department of the Ministry of Foreign Affairs and Regional Integration (RDMFA & RI)	202	17.29%
Ministry of Finance (MF)	148	12.67%
West Africa Security and Intelligence Network (WASIN)	115	9.85%
Total	1168	100.00%

Source: Research Data (2024).

The sample size was determined through application of *Yamane's (1967)* formula and turned out to be 298 respondents, which provided a statistically valid foundation for quantitative analysis. To arrive at the sample size and ensure methodological rigour, the study employed a combination of probability and non-probability sampling techniques that were deemed appropriate to tackle the double goals of representativeness and richness of data. A probability-based stratified random sampling was particularly used to select participants for the overall quantitative survey. This technique allowed stratification of the sample population from various economic intelligence agencies into various strata. Respondents were selected randomly from each stratum in order to ensure proportional representation from each of the targeted agencies. This approach enhanced the overall generalisability and representativeness of the study's findings because it ensured that all groups concerned with economic intelligence and economic security were adequately represented in the sample.

For the key informant interviews, the study relied on the purposive sampling method, which is a non-probability technique. The purposive sampling method assisted the study in ensuring that only the officers with the required roles, experience, and responsibilities in economic intelligence work were selected to participate in the study as key informants. These specifically selected key informants provided in-depth qualitative data to the study. Purposive sampling for key informants was necessary to ensure that the research benefited from rich, informed opinions from the individuals best suited to discuss institutional coordination, technical competence, and intelligence sharing habits.

Data were therefore collected through questionnaires and key informant interviews to explore the economic security aspects in the country. Economic intelligence capabilities as an independent variable were determined by three key indi-

cators: technical capacity, financial capacity, and political capital. These indicators reflect the core institutional elements necessary for effective economic intelligence operations. Each was measured using Likert-scale items ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. The indicators of technical capacity included the presence of skilled personnel, use of relevant technologies, and adequacy of training. Financial capacity focused on the availability and sufficiency of funding for economic intelligence functions, while political capital assessed the extent of political support and institutional legitimacy as perceived by respondents.

The indicators of the dependent variable, economic security, were production levels, financial stability, and resource stability. The indicators reflect the outcome domains through which economic intelligence efforts are expected to influence national economic security. Each indicator was similarly measured using 5-point Likert items and aggregated to form a composite index for use in the regression model. Data were analysed using the Statistical Package for Social Sciences (SPSS) version 28 and manual thematic analysis.

Ordinal logistic regression was used to answer the objectives of the study, as it was deemed to be the most appropriate model for analysing the nature of the data. The dependent variables were measured using Likert-type items, which are inherently ordinal and do not satisfy the assumptions required for linear regression, such as interval measurement and normal distribution. Prior to the model selection, diagnostic tests were conducted, including tests for normality of the dependent variables, which revealed significant deviations from normality. These findings violated key assumptions of multiple linear regression and justified the application of ordinal logistic regression, which does not require normally distributed outcomes and is specifically suited for modelling ordinal response categories. Several steps were taken to uphold ethical standards, including obtaining approval for the research from Kenyatta University and research permits from various organizations in Ghana. The distribution of the sample is outlined in **Table 2** below.

Table 2. Sample size.

Category	Population	Sampling method	Proportion	Sample Size
Ministry of National Security (MNS)	187	Purposive Sampling	16.01%	48
National Intelligence Bureau (NIB)	207	Purposive Sampling	17.72%	53
Defence Intelligence (DI)	165	Purposive Sampling	14.13%	42
National Signals Bureau (NSB)	144	Purposive Sampling	12.33%	37
Research Department of the Ministry of Foreign Affairs and Regional Integration (RDMFA & RI)	202	Purposive Sampling	17.29%	52
Ministry of Finance (MF)	148	Purposive Sampling	12.67%	37
West Africa Security and Intelligence Network (WASIN)	115	Purposive Sampling	9.85%	29
Total	1168			298

Source: Research Data (2024).

5. Results

The following are the research findings on the socio-demographic characteristics of the respondents and the linkage between economic intelligence capabilities and economic security in Ghana.

Response Rate and Socio-demographic Characteristics of the Respondents

The following are the research findings on the response rate and socio-demographic characteristics of the respondents.

Response Rate

A total of 208 questionnaires were distributed to the targeted respondents. The questionnaires were distributed to respondents as follows: 48 from the Ministry of National Security, 42 Defensive Intelligence officers, 37 National Signals Bureau officers, 52 officers from the Research Department of the Ministry of Foreign Affairs and Regional Integration (RDMFA & RI), and 29 officers from West Africa Security and Intelligence Network. Furthermore, 90 key informants drawn from the Ministry of Finance and the National Intelligence Bureau were targeted.

The rate of response, as shown in **Table 3**, indicates the breakdown of the response rate for both the questionnaires and key informant interviews. There was a total response rate of 78% for the questionnaires, and 83% for key informant interviews, representing 163 respondents and 75 key informants.

Table 3. Response rate.

Data Collection Instrument	Sample Size	Responses	Percentage of response
Questionnaires	208	163	78.30%
Key Informants	90	75	83.30%
Total	298	238	

Source: Research Data (2024).

The response rates were thus adequate for data analysis based on the threshold by **Baruch and Holtom (2008)**, which stipulates that a response rate of more than 60% is adequate for carrying out data analysis.

Socio-demographic Characteristics of the Respondents

The respondents' background information was assessed based on gender, age bracket, marital status, education, length of service, and department/agency as presented below.

Gender of Respondents

The gender of the respondents was assessed based on the number of male respondents and the number of female respondents, as shown in **Figure 1** below.

From the findings in **Figure 1** above, the male respondents were 74.4%, while the female respondents were 25.6%. The findings indicated that both genders were represented. It also implies that both genders work in various security agencies in Ghana, albeit with more males than females.

Age Brackets of Respondents

The respondents' age brackets were categorized into: 21 - 35 years, 36 - 50 years, and above 50 years. The findings are presented in **Figure 2** below.

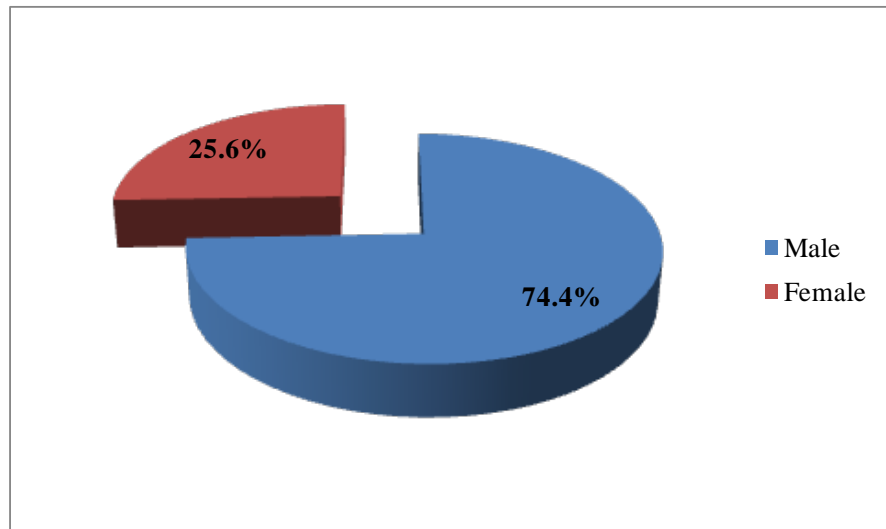


Figure 1. Respondents' gender.

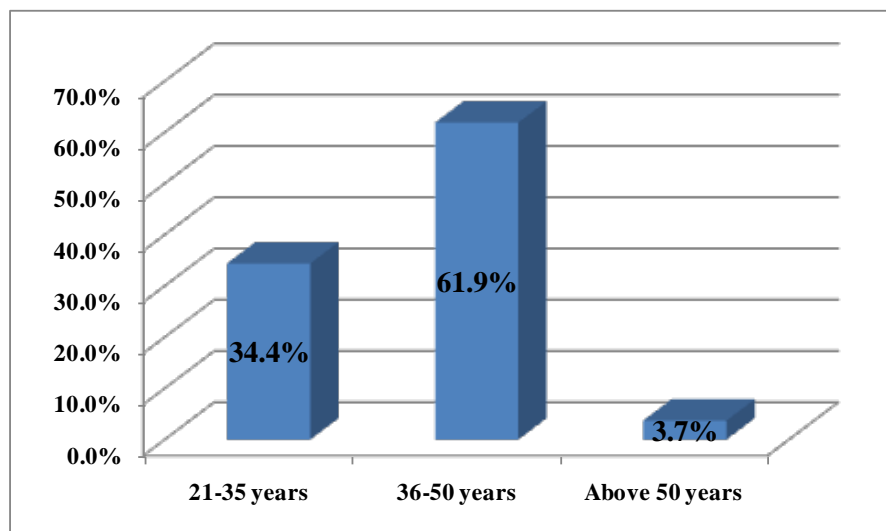


Figure 2. Respondents' age brackets.

From the findings, the respondents aged between 21 and 35 years were 34.4%, while those between the ages of 36 and 50 years were 61.9%, and those above 50 years were 3.7%. The analysis revealed that the majority of the participants were between 36 and 50 years old, which has significant implications for the objectives of the research. *Butorac et al. (2020)* note that the age group of 35 to 50 years is often characterised by stability in career and life responsibilities. They are likely to have deeper engagement with economic issues, especially those concerning national security. Their representation in the study implies that the findings are informed by individuals who are actively involved in and affected by economic dynamics, making their perspectives particularly relevant on the nexus between eco-

conomic intelligence and economic security.

Marital Status of Respondents

The marital status of the respondents was categorized as married, single, divorced, and separated. **Figure 3** presents the results.

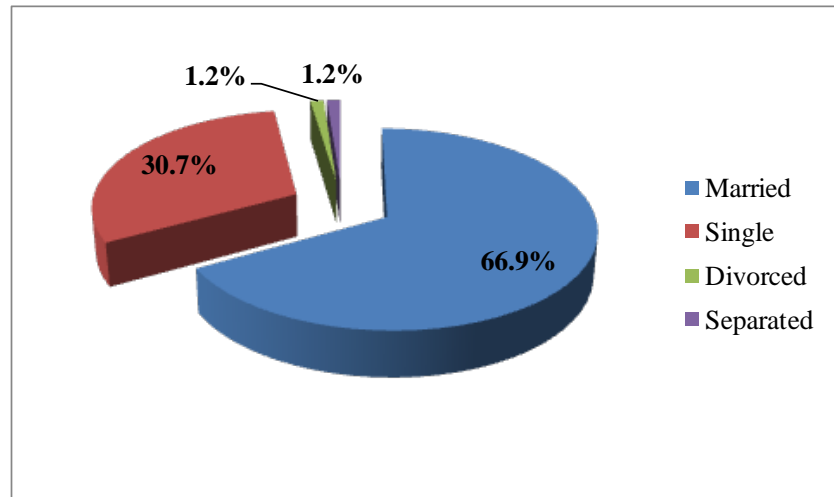


Figure 3. Respondents' marital status.

From the findings in **Figure 3**, it is apparent that 66.9% of the respondents were married, 30.7% were single, 1.2% were divorced, and 1.2% were separated. These findings on marital status offer valuable insights when considered in relation to the study's objectives. The predominance of married respondents suggests a demographic that is likely more invested in issues concerning economic security, given their family responsibilities and the potential for a greater stake in national stability. Married individuals are often more attuned to the socio-economic environment, as they need to ensure financial stability for their households. This aligns well with empirical studies, such as those by [Park and Lee \(2022\)](#), which found that married individuals tend to have a higher awareness of economic issues and are more proactive in seeking economic security solutions compared to their single counterparts.

Respondents' Level of Education

The respondents' levels of education were categorized as primary, secondary, college, university, and none. **Figure 4** presents the results.

From the findings in **Figure 4**, it was evident that 90% of the respondents were degree holders, indicating that most of the participants had accessed university-level education. Only 5.6% and 4.4% of the respondents reported having secondary and college levels of education, respectively, while none of the respondents were primary school leavers. These findings imply a high level of educational attainment among the study population, particularly among intelligence officers and government workers. The predominance of degree holders suggests that the respondents were well-equipped to understand and engage with the complex issues related to economic intelligence and national economic security.

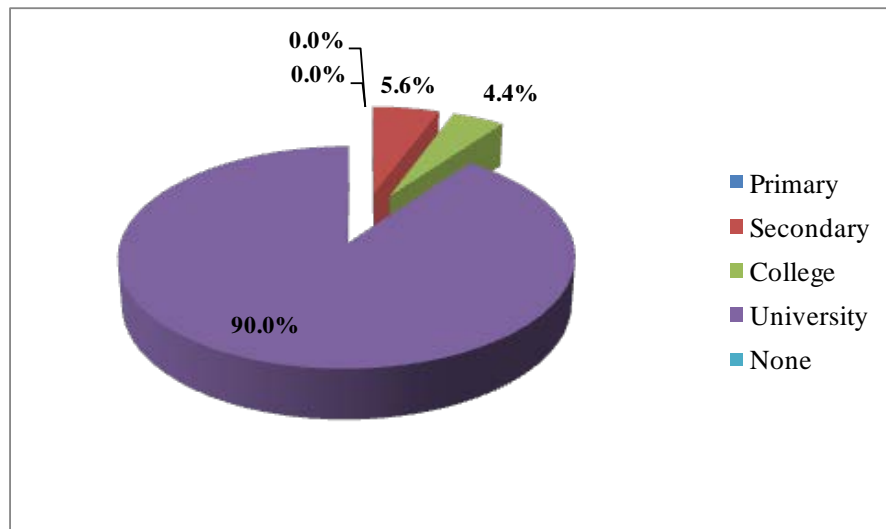


Figure 4. Respondents' education levels.

Years of Service in Intelligence

The respondents' years of service in the intelligence sector were also assessed. The years of service were categorized as 0 - 11 years, 12 - 23 years, and above 23 years. The results are presented in **Figure 5**.

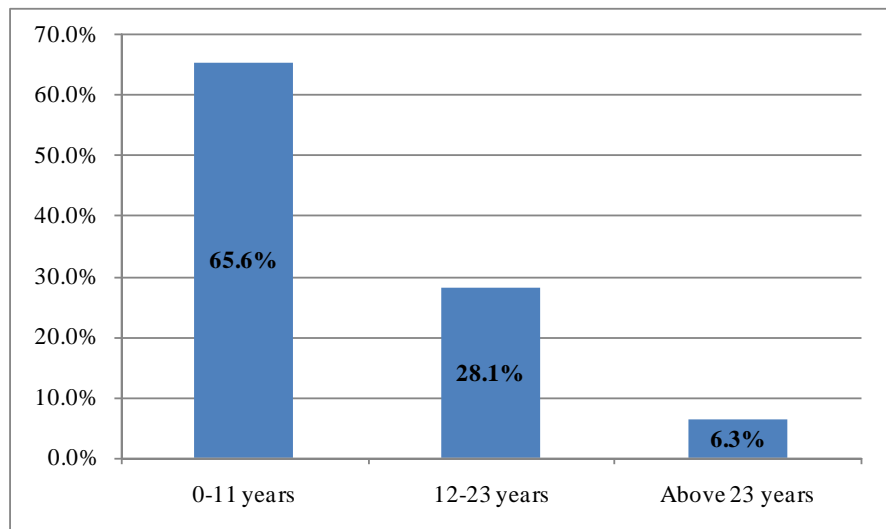


Figure 5. Respondents' years of service.

The findings in **Figure 5** indicate that the majority of the respondents had served in the intelligence sector for between 0 - 11 years (65.6%). Furthermore, 28.1% of the respondents had served between 12 - 23 years, while 6.3% had served over 23 years. These results offer critical insights into the level of experience of the intelligence officers and government workers who participated in the study. The significant proportion of respondents with 0 - 11 years of service suggests that the intelligence sector in Ghana is composed largely of relatively new entrants who may still be developing their skills and expertise in economic intelligence. This

observation is particularly relevant to the study's objectives, which focus on assessing the capability of economic intelligence to enhance national economic security.

Work Departments of the Respondents

The respondents' departments or agencies were also assessed. There were five major agencies: the Ministry of National Security, the Research Department, the National Intelligence Bureau, the Ministry of Finance, and the West Africa Security and Intelligence Network. **Figure 6** shows the study findings on respondents' work organizations.

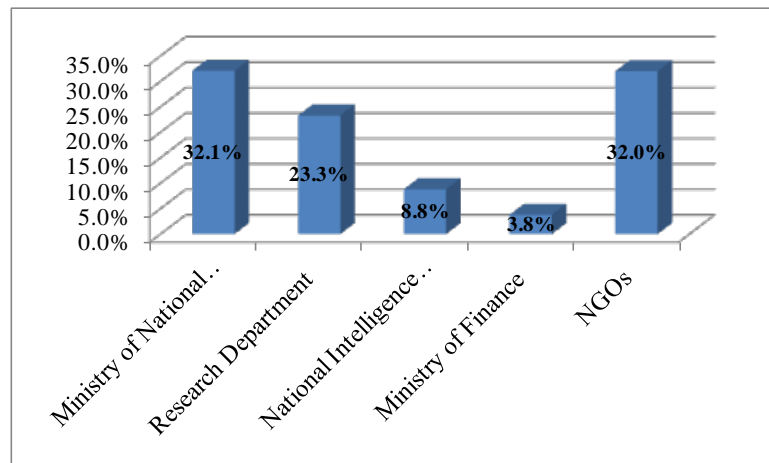


Figure 6. Respondents' department/agency.

From the results in **Figure 6**, it is evident that 32.1% of the respondents worked in the Ministry of National Security, 23.3% worked in the research department, 8.8% worked in the National Intelligence Bureau, 3.8% worked in the Ministry of Finance, and 32% worked in the NGO-West Africa Security and Intelligence Network (WASIN). The notable presence of respondents from the Ministry of National Security (32.1%) indicates that a substantial proportion of the participants are directly involved in the national security apparatus, thereby having a significant role in the country's economic security landscape. This presence aligns well with the study objective, which was to assess the contribution of economic intelligence to economic security. The respondents are likely to provide first-hand insights into the operational dynamics of national security measures.

Diagnostic Tests

Before conducting the regression analysis, several diagnostic tests were performed to assess the assumptions underlying the choice of the statistical model and to determine the suitability of using ordinal logistic regression. First, the normality of the residuals was tested using the Shapiro-Wilk test, the results of which are presented in **Table 4**. The p -value was 0.00000661, which is significantly less than the 0.05 threshold. This indicates a violation of the normality assumption. Given that the dependent variables in the study were derived from Likert-type ordinal scales, the violation of normality combined with the ordinal nature of the

data provides strong justification for employing ordinal logistic regression instead of linear models that assume continuous, normally distributed outcomes.

Table 4. Normality test.

Test	Statistic	<i>p</i> -value
Shapiro-Wilk Test for Normality	0.945782	0.00000661

Next, the Breusch-Pagan test for homoscedasticity was conducted to determine whether the variance of the residuals was constant across levels of the independent variables. As shown in **Table 5**, the LM statistic was 4.613 with a *p*-value of 0.202, while the F-statistic was 1.543 with an associated *p*-value of 0.205. Both *p*-values exceed 0.05, suggesting that the data met the assumption of homoscedasticity and that residual variance is stable.

Table 5. Homoscedasticity Test

Test	LM Statistic	<i>p</i> -value	F-value	F <i>p</i> -value
Breusch-Pagan Test for Homoscedasticity	4.613428	0.202393	1.543765	0.205315

To test for multicollinearity, the Variance Inflation Factor (VIF) was computed. As presented in **Table 6**, all VIF values ranged from 1.03 to 1.348, and tolerance values fell between >0 and <1. These figures are well within acceptable thresholds, indicating that multicollinearity was not a concern and that each independent variable contributed unique explanatory value to the model.

Table 6. Multicollinearity test.

Variable	VIF
Technical Capabilities	1.16
Financial Capabilities	1.03
Organizational Capabilities	1.17

Table 7. Regression coefficient on the influence of economic intelligence capabilities on economic security in Ghana.

	Coefficient	Std. Error	Wald Test	<i>p</i> -value	Odds Ratio
Political Capital	0.17935	0.23994	3.016456	0.05835	0.97
Technical Capacity	0.684258	0.303511	5.082652	0.02416	1.98
Financial Capacity	1.429605	0.255347	13.72314	0.00000	3.18

The ordinal logistic regression results presented in **Table 7** illustrate how various components of economic intelligence capabilities influence economic security in Ghana. Among the predictors, financial capacity had the strongest and most

statistically significant effect ($\beta = 1.43, p < 0.001$), with an odds ratio of 3.18, indicating that a unit increase in financial capacity is associated with a 3.18 times greater likelihood of improved economic security. Similarly, technical capacity significantly predicted economic security ($\beta = 0.68, p = 0.024$), with an odds ratio of 1.98, suggesting a nearly twofold increase in the odds of economic security with improved technical capacity.

In contrast, political capital had a positive but statistically non-significant influence ($\beta = 0.18, p = 0.058$), with an odds ratio close to 1 (0.97), indicating a minimal practical effect within this model. These findings suggest that investments in financial and technical resources within intelligence agencies play a more substantial role in enhancing economic security than political goodwill alone.

6. Discussion of Results

The findings on financial capability showed the most significant influence on economic security with the highest odds ratio. This means that improving financial capability within intelligence agencies more than three times elevates the likelihood of improved economic security outcomes. The significance arises because money plays a very important role in sustaining intelligence infrastructure, acquiring new technologies, training human resources, and maintaining analysis equipment (Reznik et al., 2023). The qualitative data substantiates this; one key informant (KI-6) reported, “*Financial and logistical constraints are a key characteristic of most economic intelligence agencies... leading to an absence of adequate intelligence information in areas like international economic threats.*” This confirms the evidence that without sufficient financial investment, intelligence agencies are working under operational restrictions that limit their effectiveness.

These findings align with empirical research within other developing contexts. For instance, Eshun (2022) and Hoffmann (2022) determined that underfunding of economic intelligence agencies compared to their military and counter-terrorism counterparts results in poor tools, delayed production of intelligence, and diminished scope of surveillance. Similarly, Balanda and Cherniak (2022) pointed out that economic intelligence is back-bunkered in national security budgets even as it becomes more critical. The financial capacity value in the study thus supports Economic Security Theory, under which the resilience of a country depends greatly on highly endowed institutions able to withstand internal and external shocks.

Technical capacity was similarly found to be significant in predicting economic security. This shows that an effective and technologically capable human resource foundation enhances the probability of economic security. Based on the qualitative data, KI-4 asserted: “*There is enough technical capacity when you look at the skills and experience of the staff that work in the economic intelligence agencies.*” However, the same informant also stressed the point that “*regular trainings that go with new technologies need to be given much attention as they improve the quality of output we deliver.*” The two perspectives by the key informant illustrate the need for continuous capacity building of the technical staff as a way of strength-

ening the role of technical capacity in economic security. The finding also supports existing literature. For instance, [Chukwuka and Imide \(2024\)](#) indicated that the contribution of intelligence to the improvement of economic security is tied to the technical capacity of all the agencies involved in gathering intelligence. This finding aligns with Just Intelligence Theory, which places intelligence as a justified moral imperative to prevent harm but maintains that moral purpose needs to be balanced with technical competence and capacity. Without existing proficiency and facilities, even morally justified intelligence endeavours are ineffective.

The findings revealed that economic security was not substantially predicted by political capital. It suggests that political goodwill is not solely sufficient to propel operational efficiency in intelligence. The qualitative data sketch a nuanced picture: while the majority of respondents acknowledged the current government policies and programs, they also indicated that these are often short on continuity, coordination, or concrete implementation. As one informant put it, “*The current political class has goodwill... however, more cooperation is needed if this goodwill is to bear fruit on economic security.*” This reflects a common understanding that political will plays some role in strengthening the role of intelligence on economic security. The non-significance of political capital could be explained by [Hardy’s \(2021\)](#) suggestion that economic intelligence tends to have less solid support than counter-terrorism or military intelligence. This absence of consistency limits the ability of political goodwill to generate stable returns in economic security results.

With this evidence in mind, General Systems Theory is a viable interpretative paradigm. The theory argues that for a system to function best, its component parts must function together. Political support, while important, must be based on an efficiently coordinated system of capable, well-equipped, and communicative agencies. The irrelevance of political capital highlights the necessity of systemic harmony, not rhetorical agreement, in achieving sustainable economic security.

7. Conclusion and Recommendations

The study highlights the critical role of economic intelligence capabilities in enhancing economic security in Ghana. It specifically examines financial capacity, technical capacity, and political capital as key institutional dimensions shaping the effectiveness of economic intelligence efforts. The findings demonstrate that financial capacity is the most decisive factor, underscoring the importance of adequate and sustained funding for intelligence agencies. Without strong financial backing, agencies are constrained in their ability to invest in infrastructure, conduct strategic intelligence operations, and respond effectively to emerging economic threats.

The study also shows that technical capacity, particularly the presence of skilled personnel and relevant technological tools, plays a significant role in promoting economic security. The ability to process, analyse, and disseminate intelligence in a timely manner depends largely on the technical proficiency and readiness of intelligence institutions. In contrast, political capital, while positively viewed, was

not found to have a significant direct influence. This suggests that political goodwill, in the absence of concrete institutional reforms and strategic coordination, may not sufficiently support intelligence functions.

The government and policymakers should therefore prioritize strengthening the financial and technical foundations of economic intelligence agencies. This includes increasing operational budgets, enhancing access to modern technologies, and supporting regular capacity-building initiatives. Furthermore, political support should be translated into structured, long-term institutional commitments to foster a more resilient economic intelligence system capable of ensuring sustained economic security.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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