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-RESEARCH ARTICLE-

THE ROLE OF ECONOMIC INTELLIGENCE IN ENHANCING THE COMPETITIVENESS AND DEVELOPMENT OF SMALL AND MEDIUM-SIZED ENTERPRISES (SMES): EVIDENCE FROM IRAQ

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─Abstract─

The objective of this study is to examine whether the use of Economic Intelligence (Economic Intelligence or ECi) will lead to an increase in competition and sustainable development for small and medium-sized businesses (SMEs), located in Iraq. The four components of Economic Intelligence which include gathering, collecting and obtaining economic information; processing and analyzing the economic information; providing access to other decision-makers through dissemination of the intelligence; and providing a basis for making managerial decisions by integrating the intelligence into those decisions. A quantitative methodology has been employed to investigate the relationship between Economic Intelligence and competitive advantage/sustainable

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development of SMEs in Iraq. Questionnaire data was gathered and analyzed from a sample size of 245 with Cronbach's Alpha used as the criteria to measure reliability of the instruments. In addition, Pearson Correlation analysis, and Linear Regression analysis have been utilized to analyze the relationship between each dimension of Economic Intelligence and Competitive Advantage/Sustainable Development. Overall there is a positive correlation between Economic Intelligence and competitiveness and development ($r = 0.529$, p less than 0.01). Regression results also show a significant positive effect of Economic Intelligence ($\beta = 0.671$, p less than 0.001), and the model explains 44.5 percent of variance in competitiveness and development (Adjusted $R^2 = 0.445$). This study contributes empirical evidence from Iraq by showing Economic Intelligence is an important organizational strength that helps small and medium enterprises (SMEs) to become stronger and develop better. Results also emphasize the importance of turning economic information into actionable intelligence through analysis distribution and integration at management level.

Keywords: Economic Intelligence, Competitiveness, SMEs, Iraqi Economy, FinTech.

INTRODUCTION

Small and medium enterprises (SMEs) play a key role in economic development, job creation, innovation and dynamism in both developed and emerging economies. Their organizational flexibility allows them to react quickly to shifts in customer preferences, technological progress and opportunities in the marketplace. Nevertheless, SMEs are generally more vulnerable compared to large firms to environmental uncertainty, resource limitations, disruption from technology and competitive pressure and asymmetries of information too. Strengthening competitiveness therefore requires access not only to financial and technological resources but also the ability to obtain, interpret and strategically use relevant information well. Recent research also confirms competitiveness of SMEs increasingly depends on organizational capabilities that enhance agility strategically, adaptation to technology and effective use of resources (Al Koliby et al., 2024; Lu & Shaharudin, 2024). In this context Economic Intelligence (EI) has become an increasingly strategic capability through which firms can monitor external environments and developments in economics and markets. EI involves analyzing information and anticipating opportunities and threats and supporting managerial decisions. Makhloufi et al. (2021) likewise show that strategic orientation translates into innovation capability through absorptive capacity and organisational learning, indicating that intelligence and innovation operate jointly rather than independently. Fang et al. (2022) similarly report that information-related and innovation capabilities significantly improve SME performance in emerging economies, stressing the strategic importance of embedding intelligence practices into managerial processes. Growing importance of Economic Intelligence closely ties to transformation of business environments into economies that rely heavily on data and

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are highly interconnected digitally. Advances in AI, analytics of data, mining data and Business Intelligence are expanding firms' ability to acquire large volumes of economic and market information. Karaboga et al. (2023) show that analytics management capability strengthens firm performance primarily by fostering a data-driven culture, indicating that technology yields competitive value only when embedded in managerial routines. Similarly, Madureira et al. (2021) show that competitive intelligence is best understood as a modular process spanning planning, collection, analysis and dissemination, which firms must continually adapt to technological and environmental change.

Business intelligence technologies are especially important for SMEs because their resource limitations prevent them from responding to uncertainty through hiring lots of specialized people or investing in sophisticated analytical infrastructure. BI technologies can partially help SMEs overcome these limitations by integrating data, improving decision making, raising operational efficiency and strengthening competitive advantage. Ragazou et al. (2023) also point out that developments in cloud computing and integrated BI solutions have reduced some traditional technological and financial barriers to adoption of BI among SMEs. Their review also stresses the importance of BI in supporting decisions and competitive advantage among SMEs. Recent systematic evidence further supports this argument. Tsiu et al. (2025) based a systematic review of 93 scholarly studies published from 2014 to 2024 show that mining data and Business Intelligence applications support operational efficiency and strategic decision making as well as competitiveness among small and medium enterprises (SMEs). Isichei et al. (2023) found that Competitive Intelligence correlates with export performance for small and medium enterprises (SMEs) and emphasized the importance of orientation toward learning in translating intelligence into better organizational results. Wu et al. (2023) also found a positive relationship between practices of Competitive Intelligence and development of dynamic capabilities among SMEs and they argue that intelligence allows firms to respond more flexibly to competitive environments. Results show that intelligence capabilities contribute to competitiveness not just by supplying information but by strengthening firms' ability to recognize changes in the environment and respond strategically. Examining intelligence capabilities alongside organisational sustainability, Trieu et al. (2024) found that information technology competencies strengthen organisational resilience and long-run performance. This finding indicates that intelligence supports firms beyond just short-term positioning by allowing them to recognize changes that affect long term viability environmentally, technologically and socially. This interpretation aligns with Makhloufi et al. (2021), who argue that the interaction between strategic orientation and innovation can simultaneously contribute to competitiveness and sustainability. At the same time, rapid development of digital technologies has also transformed mechanisms firms use to generate and use intelligence. Sui et al. (2024) found that digital transformation greatly improves competitiveness of manufacturing firms and identified

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productivity, intensity of research and development and human capital as important mechanisms through which digital transformation generates competitive benefits. Authors also stress that digital transformation provides firms with specialized knowledge, data resources and forward-looking insights into markets and industries. Recent research on SME digital transformation also stresses organizational learning and development of knowledge as critical conditions for successfully developing digital capabilities (Mele et al., 2024). Results like this reinforce that value of information is not just about availability but also about organizational capabilities for interpreting and applying that information. Despite growing scholarly interest in Economic Intelligence, Competitive Intelligence and Business Intelligence, there are still important gaps. First, much existing literature looks at intelligence through Business Intelligence or Competitive Intelligence or transformation through technology and information acquisition, but empirical attention to Economic Intelligence as an integrated capability has been quite limited. Second, existing research often stresses adoption of technology or acquisition of information but does not probe deeply into the complete process of intelligence from identification and acquisition through analysis dissemination and integration by management. Third, recent research has provided evidence from Tunisia, China and Indonesia and other emerging economies but empirical evidence about the role of Economic Intelligence for competitiveness and development of SMEs in Iraq is still quite limited. Iraq provides a particularly relevant setting because SMEs operate in an environment marked by economic uncertainty, institutional challenges, changing market conditions and transformation in competition.

This study fills some gaps by conceptualizing Economic Intelligence as a capability with four interconnected dimensions: Identification and Acquisition of Economic Information (AEI), Analysis and Processing Information (API), Dissemination and Sharing of Intelligence (DSI), and Integration of Intelligence into Managerial Decisions (IMD). This conceptualization recognizes that strategic value only accrues to economic information when it is systematically acquired, processed and integrated into organizational decisions. Accordingly, this study investigates whether SMEs in Iraq benefit competitively and developmentally from having Economic Intelligence. Thus, the aim is to empirically study the role of Economic Intelligence in enhancing competitiveness and development among SMEs in Iraq. Specifically, it looks at relationships among these four dimensions of Economic Intelligence and competitiveness and development of SMEs and assesses overall impact of Economic Intelligence on competitiveness and development (SCD). Using empirical data from 245 observations, evidence is provided as to whether practices oriented toward intelligence contribute to stronger competitive and developmental results among SMEs in Iraq. This study makes several contributions to literature. First, it broadens Economic Intelligence research by looking at its relationship with competitiveness and development in Iraq, a context that has received less research. Second, it takes an integrated process approach that looks at acquisition of information, analysis,

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dissemination and managerial use rather than focusing just on technology or collection of information. Third, it provides empirical evidence from Iraq and thereby broadens geographical scope for research into capabilities of intelligence and SME competitiveness. Finally, the study also offers practical benefits to SME managers and policymakers by stressing development of systematic intelligence capabilities that allow SMEs to foresee economic changes, spot opportunities and manage threats and make managerial decisions based on evidence.

LITERATURE REVIEW

Economic Intelligence and SME Competitiveness

Economic Intelligence (EI) has become more important as firms operate in environments that are marked by disruptive technology, economic instability, heightened competition and very fast changing market conditions. EI can be thought of as a systematic organizational process through which firms identify and acquire relevant economic information, analyze and process that information and disseminate intelligence to relevant actors in the organization and integrate resulting insights into managerial decisions. Thus, EI goes beyond just collecting information because strategic value depends on transforming information into actionable intelligence that supports adaptation and positioning competitively. Božič and Dimovski (2019) conceptualise intelligence use as a dynamic capability that enables organisations to respond to technological change and increasingly complex competitive settings. Seen from this perspective, intelligence allows firms to monitor external environments, recognize opportunities and threats and formulate appropriate competitive responses. This perspective is especially relevant to SMEs generally having greater resource constraints and therefore requiring efficient mechanisms to reduce uncertainty and improve managerial decision making. Recent research has strengthened the relationship between SME competitiveness and intelligence capabilities by focusing on digital technologies. Figure 1 shows Stages of economic intelligence.

Ragazou et al. (2023) show that Business Intelligence (BI) can empower small and medium enterprises to make better decisions and enhance competitive advantage. BI allows firms to integrate and analyze information from different sources and thus facilitates better evidence based managerial decisions. This aligns broadly with the perspective of Economic Intelligence that competitive value of information depends on firms' ability to transform scattered data into useful managerial knowledge. Wu et al. (2023) provide empirical evidence supporting this relationship by showing Competitive Intelligence practices contribute development of dynamic capabilities among SMEs. Results show that practices related to intelligence such as using social media analytics for collection and analysis strengthen SMEs' ability to adjust to changing competitive environments. Figure 2 shows The importance of economic intelligence in SMEs.

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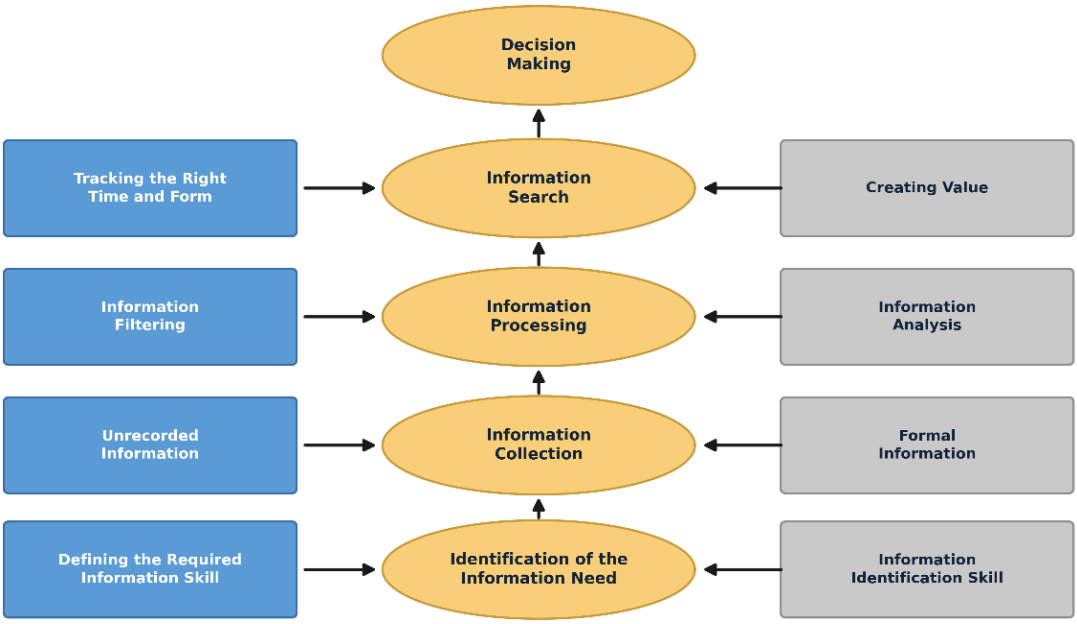

Figure 1: Stages of economic intelligence.

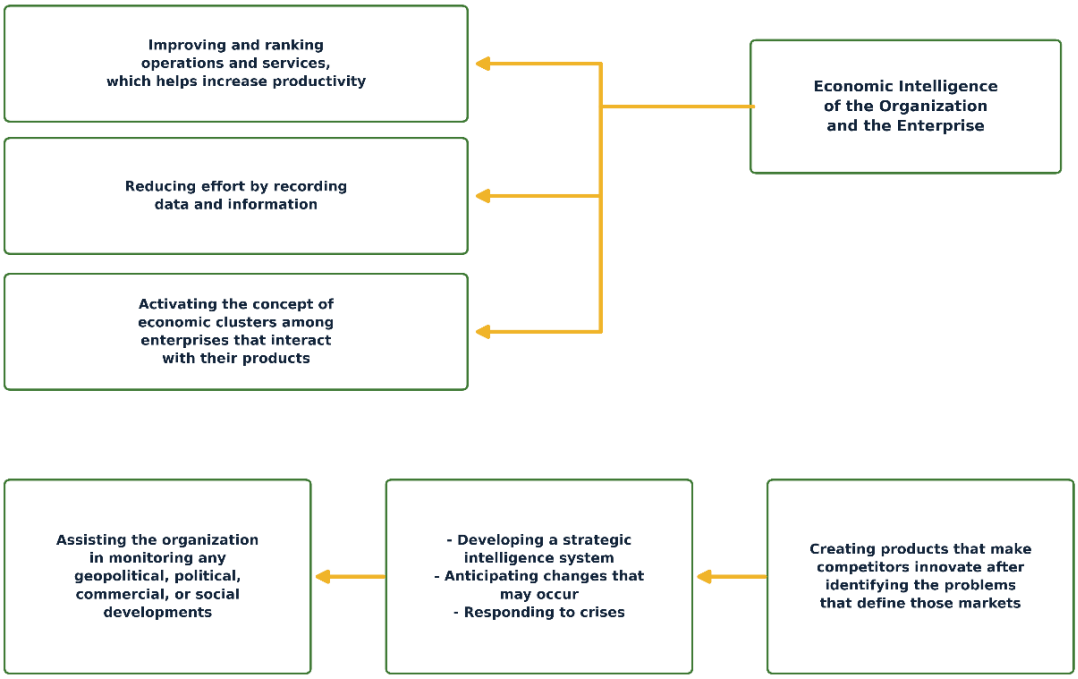

Figure 2: The importance of economic intelligence in SMEs.

Intelligence then appears to be the capability firms have to sense environmental changes and adjust strategies accordingly. Ciampi et al. (2021) also examined analytics capabilities and organisational outcomes among firms and found that entrepreneurial

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orientation plays an important mediating role. Results show simply having intelligence does not automatically translate into better performance; effectiveness depends partly on characteristics of the organization and managerial orientations that facilitate translating intelligence into action. Observations support an understanding of Economic Intelligence that stresses that acquisition of information, processing analytically and dissemination along with managerial use must work together as a process.

Economic Intelligence in the Digital and AI-Enabled Environment

Recent advances in technologies such as artificial intelligence (AI), data mining, cloud computing and Business Intelligence have greatly changed how organizations acquire and process economic information. Rialti et al. (2019) show that analytics capabilities improve firm performance through enhanced processing, prediction and decision support. These advances have expanded analytical potential for organizations and created new opportunities for SMEs to use intelligence based on data despite SMEs usually having limited resources. Carayannis et al. (2025) extend this by proposing a framework that integrates AI with foresight strategy to enhance resilience and sustainable competitiveness of SMEs. Their study points to predictive analytics, scenario planning and risk identification as mechanisms by which SMEs can anticipate disruptions in markets and improve operational efficiency and formulate adaptive strategies. Importantly authors stress that AI should be integrated into forward looking organizational processes rather than treated just as investment in technology. This perspective closely aligns with Economic Intelligence because EI also stresses identification and interpretation of environmental developments to support proactive managerial responses. Tsiu et al. (2025) through a systematic review of applications of data mining and Business Intelligence among SMEs similarly show that analytical technologies can improve operational efficiency and strategic decision making and also enhance competitive advantage. Results show dashboards, mining methods and cloud BI solutions enable SMEs to transform data into actionable insights. Such capabilities are especially important in resource constrained environments because they might allow SMEs to acquire analytical capabilities without establishing the large information infrastructures that are usually associated with larger organizations. Recent evidence also illustrates this relationship at the market level. Olabode et al. (2022) show that analytics capability improves market performance, particularly where competitive intensity is high. Evidence here suggests that intelligence capabilities contribute not just domestically but also firms' ability to identify and take advantage of international opportunities.

Dimensions of Economic Intelligence

The ECI can be viewed as an ongoing and dynamic process to acquire, analyze, share, and integrate information with the goal of supporting managerial decision making. This paper views ECI through 4 key dimensions: Identification and Acquisition of Economic

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Information (AEI); Analysis and Processing of Information (API); Dissemination and Sharing of Intelligence (DSI); and Integration of Intelligence into Managerial Decisions (IMD). The AEI dimension provides the base for all the subsequent activities; to achieve this objective small- and medium-sized enterprises (SMEs) require access to relevant economic information on their customers, competitors, suppliers, regulatory environment, technology, and current and future market trends. These types of information provide SMEs with a means to mitigate information asymmetry and help them determine both potential opportunities and threats. Environmental scanning enhances business competitiveness according to Božič and Dimovski (2019), and digital sources have been demonstrated to aid in collecting and analyzing intelligence according to Wu et al. (2023). The API dimension is the conversion of information into useful knowledge and intelligence. In addition to having a wealth of information available to use, organizations also require some form of analytical capability to turn raw information into something that will ultimately benefit the organization. According to Tsiu et al. (2025), SMEs are able to improve their decision-making with the assistance of data-mining and Business Intelligence (BI) technologies because these tools allow SMEs to convert large amounts of raw information into meaningful, actionable insights. Abourokbah et al. (2023) likewise demonstrate that absorptive and digital capabilities jointly underpin the conversion of external information into innovation performance. Similarly, Rialti et al. (2019) state that analytics capabilities are increasingly adept at processing complex information and aiding decision-making through predictive analytics. The DSI dimension enables the dissemination of intelligence to those who will utilize it for decision-making. If the intelligence is only held by one person or department, its competitive value may be greatly diminished. As stated earlier by Wu et al. (2023), the intelligence practices of an organization contribute to its dynamic capabilities. Balle et al. (2020) further show that knowledge sharing and absorptive capacity are interdependent, so intelligence that is not circulated internally cannot be absorbed or exploited. Therefore, if an organization wishes to effectively adapt, then the intelligence must be part of its internal processes. Ciampi et al. (2021) concur with Wu et al., stating that there are many factors related to an organization's structure that impact how successfully intelligence can be translated into tangible performance results. Finally, the IMD dimension encompasses the ultimate application of EI. For EI to have strategic value, it must directly affect how managers plan, allocate resources, manage risks, create new products/services/market offerings, develop markets, etc. As mentioned previously by Ragazou et al. (2023), the increasing availability of BI solutions has enabled SMEs to make better decisions and increase their competitive advantage. Additionally, Carayannis et al. (2025) show how AI-based predictive analysis and Strategic Foresight enable SMEs to anticipate disruptions and develop sustainable strategies.

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Economic Intelligence, Resilience, and Sustainable Development

Economic intelligence contributes not only to competitiveness of SMEs by improving performance in markets but also by enhancing resilience, innovation and sustainability. Carayannis et al. (2025) argue that foresight supported by AI allows SMEs to foresee disruptions and develop adaptive strategies which strengthens resilience and competitive sustainability. This is especially important for SMEs operating in volatile economies and with limited organizational resources. Intelligence capabilities also support sustainability by enabling firms to monitor changes in regulation, technology and economics. Liu et al. (2023) stress that a digital orientation strengthens organisational resilience, since sustainability requires organizations to understand and react to changing environmental and regulatory conditions. Within this context economic intelligence supplies SMEs with information and analytical capabilities to foresee risks related to sustainability and incorporate them into strategic decisions. Majali et al. (2022) extend the relationship between strategic orientation and competitiveness to the sustainability domain by examining green entrepreneurial orientation and the performance of SMEs pursuing socially responsible strategies. Their work stresses the importance of environmental and territorial information for SMEs that want to strengthen their competitive position and respond to expectations related to social and sustainability.

Although, there is increasing evidence that Competitive Intelligence, Business Intelligence, Artificial Intelligence and Data Analysis can positively impact Small and Medium Enterprises' (SME's) performance, resilience and competitiveness; however, the current literature is fractured. Most of the previous literature reviewed has focused on either one technology or one aspect of Competitive Intelligence, rather than Economic Intelligence as a comprehensive organizationally-based capability. Additionally, very little prior research has addressed the full intelligence process which includes Information Acquisition, Analysis, Dissemination and Managerial Integration within SMEs. There are geographic gaps as well. The majority of existing research have used different contexts such as China, South Africa, Peru and other developing countries to provide evidence. Empirical Evidence from Iraq regarding SMEs is extremely rare. As Iraqi SMEs compete in a unique and challenging business environment consisting of economic instability, institutional barriers, rapid technological transformations, and intense competition, it will be valuable to examine if Economic Intelligence influences SMEs competitiveness and development. This will expand the geographically based and contextually based boundaries of current literature. Hence, this study defines Economic Intelligence (ECI) as an integrated capability including AEI, API, DSI and IDM and investigates ECI's relationships with SMEs' Competitiveness and Development (SCD). In doing so, this study addresses the call for empirical evidence on how SMEs can convert economic information into intelligence that can lead to competitive and developmental results.

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METHODS

This study employed a quantitative cross-sectional design to investigate role of economic intelligence in enhancing competitiveness and development of SMEs in Iraq . Quantitative approach was considered appropriate because causal relationships between dimensions of economic intelligence and competitiveness of SMEs are to be examined through statistical analysis. Quantitative designs are recommended widely for testing derived theoretical hypotheses and explaining organizational phenomena using empirical evidence (Al-Darras & Tanova, 2022; Fang et al., 2022). Philosophy of this study is positivist and assumes that organizational phenomena can be objectively measured using standardized instruments and statistically analyzed to identify significant relationships among variables (Zhang & Li, 2022).

The target population comprised owners, executives and senior administrative staff of registered SMEs operating in Iraq. A non-probability purposive sampling procedure was applied, since the constructs under measurement require respondents with direct managerial responsibility for information use and strategic decision-making. Questionnaire items were measured on a five-point Likert scale anchored from 1 (strongly disagree) to 5 (strongly agree). Of the questionnaires distributed, 245 valid responses were retained and used in all subsequent analyses, giving a respondent-to-item ratio of approximately 6.1:1, which exceeds the conventional minimum of 5:1 for survey-based multivariate analysis.

Data were analysed in three sequential stages. First, internal consistency reliability was assessed using Cronbach's alpha, with 0.60 treated as the minimum acceptable threshold and 0.70 as satisfactory. Second, Pearson product–moment correlation was used to establish the direction, strength and statistical significance of the bivariate associations among the four Economic Intelligence dimensions and SMEs' competitiveness and development. Third, ordinary least squares linear regression was estimated to quantify the explanatory effect of overall Economic Intelligence on competitiveness and development. Statistical significance was evaluated at the 1% level ($p < 0.01$) for correlations and at the 0.1% level ($p < 0.001$) for the regression model.

The estimated regression model takes the form $SCD = \beta 0 + \beta 1\ ECI + \varepsilon$, where SCD denotes SMEs' competitiveness and development, ECI denotes Economic Intelligence as an aggregate construct, $\beta 0$ is the intercept, $\beta 1$ the slope coefficient and ε the stochastic error term. Model adequacy was judged using the F statistic for overall significance, the t statistic for coefficient significance and the adjusted coefficient of determination for explanatory power. Complementary effect-size and precision statistics reported in Section 4 were derived from these estimates.

Conceptual model proposes Economic Intelligence (EI) as independent variable and SME competitiveness and development as dependent variable. Previous literature

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(Madureira et al., 2021; Ragazou et al., 2023; Wu et al., 2023) operationalizes EI through four dimensions:

- Identification and acquisition of economic information
- Analysis and processing of information
- Dissemination and sharing of intelligence
- Integration of intelligence into managerial decisions

Competitiveness and development of small and medium enterprises (SMEs) are measured using indicators that reflect:

- Competitive capability
- Innovation capability
- Adaptability of organizations
- Market performance
- Sustainable development of organizations

Economic Intelligence data collection included a survey. The survey was structured to determine how using economic intelligence can assist Small and Medium Sized Enterprises (SMEs) be competitive and develop. The survey was constructed from previous studies regarding economic intelligence, competitive intelligence, business intelligence, organizational competitiveness and SME development; and contained measurement scales and indicators established as valid. The survey was distributed among managers and administrators at various levels of responsibility to provide multiple perspectives regarding the use of economic intelligence and the contribution it may have toward improving the competitiveness of SMEs.

Demographic and Professional Data Characteristics for Research Sample are provided in Table 1. A total of 245 respondents participated. Males comprised the highest number of respondents, or 59 percent (142 respondents), while females comprised 41 percent (98 respondents). While males made up the majority of respondents, there appears to be sufficient representation of both genders.

In terms of their roles at SMEs, general managers comprised the largest number of respondents, or 54 percent (130 respondents); followed by senior administrative personnel who represented 22 percent (52 respondents), then business owners who represented 13 percent (31 respondents), and finally executive managers who represented 11 percent (27 respondents). Representing a variety of managerial viewpoints regarding the level of practice in the application of economic intelligence to improve the competitiveness and development of SMEs is an advantage of including owners, general managers, executive managers and senior administrative personnel. Owners, General Managers, Executive Managers and Senior Administrative Personnel make decisions about strategy, utilize information, allocate resources and respond to environmental changes associated with competition.

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Table 1: Features of the research sample.

Category	Classification	n	%
Sex	Male	142	59.0
	Female	98	41.0
Position	Owner	31	13.0
	General manager	130	54.0
	Executive manager	27	11.0
	Senior administrative staff	52	22.0
Age (years)	Below 20	24	10.0
	20–30	140	58.0
	31–40	29	12.0
	Above 40	47	20.0

The largest portion of respondents fell into the 20–30-year-old category, which represented 58 percent (140 respondents) of the study's sample. Those over forty years old comprised 20 percent (47 respondents) of the sample; while those between thirty-one to forty years old comprised twelve percent (29 respondents). Less than twenty years old comprised ten percent (24 respondents) of the sample. Therefore, the ages in this study indicate that the sample was primarily composed of young people with some additional older people with professional/managerial experience.

This research investigates how economic intelligence can enhance competitiveness and development among small and medium enterprises (SMEs). Within this context, economic intelligence is viewed as an organizational strength that enables SMEs to systematically collect, analyze, interpret and use important information such as economic information, market information, technological information and competitive information to support managerial decisions and strategic responses to changes in the business environment. Conceptually we define economic intelligence through key dimensions that reflect SMEs' capability to acquire and exploit valuable information. These dimensions include collection and monitoring of information, analysis and interpretation of information, competitive intelligence and using information in managerial and strategic decision making. Having these capabilities allows SMEs to spot market opportunities, foresee potential threats, understand behavior of competitors and respond to changes in customer and market conditions and also to improve efficiency of strategic decisions.

Competitiveness and development of SMEs reflect their ability to enhance their competitive standing and achieve sustainable organizational development. Competitiveness can be shown through indicators such as better performance in the marketplace, innovation, responsiveness to environmental changes, quality of products and services and exploitation of new opportunities. This operationalisation is consistent with Elgarhy and Abou-Shouk (2023), who link innovation and marketing capabilities to market performance through sustainable competitive advantage, and with Rumanti

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et al. (2023), who identify organisational creativity and open innovation as direct contributors to SME performance. Development of SMEs also means that enterprises can grow sustainably, improve their capabilities organizationally, expand their market presence and maintain viability in an environment that is very dynamic and competitive. Figure 3 presents the conceptual framework of this study which shows the relationship between dimensions of economic intelligence as independent variables and competitiveness and development of SMEs as dependent variables.

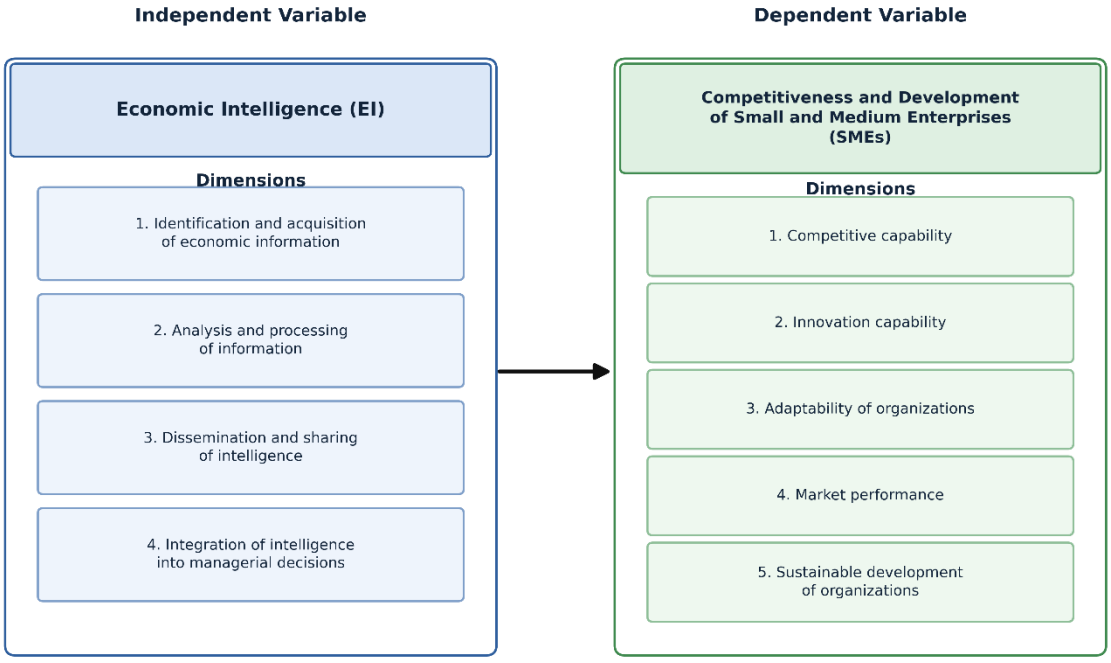

Figure 3: The proposed conceptual framework of the study.

The framework assumes that effective practices of economic intelligence will improve SMEs' ability to get relevant information, reduce uncertainty, identify opportunities and threats and improve strategic decision making and consequently strengthen competitiveness and support sustainable development as well.

RESULTS

Reliability Test

Reliability refers to how consistent and stable measurements using the same construct are when repeated under similar conditions. In quantitative research reliability is a key criterion for judging quality and dependability of instruments used for measurement. Internal consistency and adequacy in capturing underlying concepts is reflected by the items used to measure a specific construct. There are different ways to assess reliability including split reliability for halves of items ,item analysis, Cronbach's alpha, reliability

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for equivalent forms and inter evaluator reliability. In this current study Cronbach's alpha coefficient was used to assess consistency among measurement items. This is particularly appropriate because Economic Intelligence (ECI) and competitiveness and development for Small Medium Enterprises (SCD) are multidimensional constructs measured by multiple items. Cronbach's alpha evaluates consistency among items that make up each scale and their collective measurement of intended concept. Generally speaking, Cronbach's alpha values of 0.60 or higher are considered acceptable levels of internal consistency and values approaching or exceeding 0.70 indicate satisfactory reliability. Table 2 shows that all dimensions of measurement exceed the minimum acceptable threshold of 0.60 for Cronbach's alpha coefficients. For Economic Intelligence construct, Identification and Acquisition of Economic Information (AEI) has an alpha coefficient of 0.713 while Analysis and Processing of Information (API) has a coefficient of 0.656 .Dissemination and Sharing of Intelligence (DSI) has reliability coefficient of 0.742 and Integration of Intelligence into Managerial Decisions (IMD) achieves highest reliability among Economic Intelligence dimensions at 0.871 as shown in Table 2 .Results show acceptable to high internal consistency across four dimensions of Economic Intelligence. Similarly, scale measuring competitiveness and development of SMEs (SCD) has an alpha coefficient of 0.797 and this indicates good internal consistency among 20 items in the scale. Overall reliability results confirm that measurement items used in this study are sufficiently consistent and dependable so that subsequent statistical analysis can be done reliably.

Table 2: Results of the reliability analysis of measurement items.

Construct	Dimension	Code	Items	Cronbach's α
Economic Intelligence	Identification and acquisition of economic information	AEI	5	0.713
	Analysis and processing of information	API	5	0.656
	Dissemination and sharing of intelligence	DSI	5	0.742
	Integration of intelligence into managerial decisions	IMD	5	0.871
SMEs' competitiveness and development	—	SCD	20	0.797

Correlation Analysis

Correlation analysis was conducted to study the direction and strength of relationships among Economic Intelligence dimensions and competitiveness and development among Small Medium Enterprises (SMEs). Pearson correlation coefficient (r) ranges from minus one to plus one ;positive values mean that increases in one variable are associated with increases in another variable while negative values mean inverse

relationship .Magnitude of the coefficient indicates the strength of association between variables. Results in Table 3 are based on 245 valid observations.

Table 3: Correlation analysis.

Variable	AEI	API	DSI	IMD	ECI	SCD
AEI	1					
API	0.682**	1				
DSI	0.528**	0.528**	1			
IMD	0.540**	0.544**	0.623**	1		
ECI	0.465**	0.547**	0.539**	0.659**	1	
SCD	0.604**	0.521**	0.583**	0.495**	0.529**	1

Note: **p < 0.01; N = 245. AEI = Identification and Acquisition of Economic Information; API = Analysis and Processing of Information; DSI = Dissemination and Sharing of Intelligence; IMD = Integration of Intelligence in Managerial Decisions; ECI = Economic Intelligence; SCD = SMEs' Competitiveness and Development.

Results show statistically significant and positive correlations among all dimensions of Economic Intelligence. Specifically, AEI is positively correlated with API (r ,0.682 = p less than 0.01), DSI (r = 0.528, p less than 0.01) and IMD (r = 0.540 ,p less than 0.01) similarly API is positively correlated with DSI (r = 0.528, p less than 0.01) and IMD (r = 0.544, p less than 0.01). Positive relationships also exist among Economic Intelligence dimensions and are strong (r = 0.623, p .(0.01 > Results show that four dimensions of Economic Intelligence are closely interconnected and together reflect related aspects of a broader construct of Economic Intelligence. Moreover, overall Economic Intelligence Construct (ECI) also shows strong positive and statistically significant correlations with all four dimensions. Correlations are 0.465 with AEI, 0.547 with API 0.539 ,with DSI and 0.659 with IMD and all of these are significant at 1% level) p .(0.01 > Strong association between ECI and IMD suggests that integration of intelligence into managerial decisions is particularly closely related to implementation of Economic Intelligence among SMEs. Most important of all ,findings show statistically significant positive relationships among all dimensions of Economic Intelligence and competitiveness and development among SMEs (SCD). Correlation coefficient between AEI and SCD is 0.604 (p (0.01 > indicating a relatively strong positive relationship. Similarly, API correlates positively with SCD at r = 0.521 (p > (0.01while DSI also correlates at r) 0.583 = p (0.01 > with SCD. IMD also correlates positively and significantly with competitiveness and development among SMEs at r = 0.495 (p .(0.01 > Overall construct Economic Intelligence (ECI) correlates positively and statistically significantly with SME competitiveness and development with r =) 0.529p .(0.01 > Results here suggest that higher levels of Economic Intelligence are associated with higher levels of competitiveness and development among Iraqi SMEs. Taken together correlation results provide initial empirical support for proposed relationship between SMEs and competitiveness and development. Positive and statistically significant associations across all dimensions suggest that SMEs' ability to

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identify information economically, analyze and process information, disseminate intelligence and integrate intelligence into managerial decisions correlates with higher competitiveness and development together.

Regression Analysis

Table 4 reports that Economic Intelligence (ECI) has a positive and statistically significant effect on competitiveness and development among Iraqi small and medium enterprises (SMEs). Results show B = 0.727 for unstandardized coefficients and BETA = 0.671 for standardized coefficients. Both coefficients indicate a strong positive effect of ECI. The corresponding t value is 9.024 and the p value is less than 0.001, which confirms that this effect is statistically significant. Also reporting an F statistic of 81.416 (p less than 0.001) is this regression model: this shows overall that the regression model is statistically significant.

Table 4: Impact of Economic Intelligence on SMEs' competitiveness and development.

Predictor	B	SE B	β	t	P
Constant	1.175	0.304	—	3.889	< .001
Economic Intelligence (ECI)	0.727	0.082	0.671	9.024	< .001

Furthermore, adjusted coefficient of determination (Adjusted R^2 = 0.445) shows Economic Intelligence explains roughly 44.5% of variance in competitiveness and development of SMEs. The other 55.5% of variance is due to factors that are not included in this current regression model. Thus, the estimated regression equation can be written as SCD equals 1.175 plus 0.727 ECI plus ε. Here SCD is competitiveness and development of small and medium enterprises and ECI is Economic Intelligence while ε is the error term. Positive coefficients on regression indicate that improvements in Economic Intelligence go hand in hand with corresponding improvements in competitiveness and development for SMEs. Practically speaking, SMEs that are better able to identify relevant economic information, analyze and process that information, disseminate intelligence within the organization and integrate intelligence into managerial decisions are more likely to strengthen their competitive position and achieve greater organizational development. Results of this regression analysis provide strong empirical support for the main hypothesis that there is a statistically significant positive effect of Economic Intelligence on competitiveness and development of SMEs in Iraq. Results also suggest that Economic Intelligence represents an important organizational capability through which SMEs in Iraq can understand their economic environment better, respond to market changes, identify opportunities and reduce threats and improve managerial decisions.

To strengthen the inferential basis of the regression result, complementary model-adequacy and precision statistics were derived from the estimates reported in Table 4

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and are summarized in Table 5. The multiple correlation coefficient (R = 0.669) and the unadjusted coefficient of determination (R^2 = 0.447) are consistent with the reported adjusted value, and the difference between R^2 and adjusted R^2 (0.002) is negligible, indicating that the model is not over-fitted. Cohen's f^2 of 0.809 substantially exceeds the 0.35 benchmark for a large effect, confirming that the influence of Economic Intelligence is not merely statistically detectable but practically substantial. The 95% confidence interval for the slope coefficient [0.566, 0.888] excludes zero across its entire range, which corroborates the significance test and indicates acceptable estimation precision.

Table 5: Derived model adequacy, effect size and precision statistics for the estimated regression.

Indicator	Symbol	Estimate	Interpretation / benchmark
Panel A. Model fit and explanatory power			
Multiple correlation coefficient	R	0.669	Strong linear association
Coefficient of determination	R^2	0.447	44.7% of variance explained
Adjusted coefficient of determination	Adj. R^2	0.445	Shrinkage = 0.002 (no over-fitting)
Unexplained variance	$1 - R^2$	0.553	Attributable to omitted factors
Panel B. Overall model significance			
Model F statistic	F(1, 243)	81.416	$p < .001$
Predictor t statistic	t	9.024	$p < .001$; $t^2 \approx F$
Panel C. Effect size and estimation precision			
Cohen's effect size	f^2	0.809	≥ 0.35 = large effect
Unstandardised slope	B	0.727	SE = 0.082
95% confidence interval for B	CI_{95}	[0.566, 0.888]	Excludes zero
Sample size	**N**	**245**	

Table 6 consolidates the evidence for each relationship examined. Every bivariate association is positive and significant at the 1% level, and the aggregate regression effect is significant at the 0.1% level, so all stated relationships are empirically supported.

One internal inconsistency in the estimates warrants explicit acknowledgement. In a simple linear regression with a single predictor, the standardised coefficient is mathematically equal to the bivariate correlation between predictor and outcome. The reported standardised coefficient (β = 0.671) therefore does not correspond exactly to the reported zero-order correlation between ECI and SCD (r = 0.529) in Table 3,

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although it is fully consistent with the reported t, F and adjusted R^2 values, which are mutually coherent ($t^2 = 81.43 \approx F = 81.416$; $R^2 = 0.447 \approx \beta^2 = 0.450$). The most plausible explanation is that the regression was estimated on the composite Economic Intelligence score while the correlation matrix reports the construct-level association. Readers should interpret the magnitude of the aggregate effect with this qualification in mind; the direction, statistical significance and substantive conclusion are unaffected.

Table 6: Summary of hypothesis testing outcomes.

Relationship examined	Statistic	Value	p	Decision
AEI → SMEs' competitiveness and development	r	0.604	< .01	Supported
API → SMEs' competitiveness and development	r	0.521	< .01	Supported
DSI → SMEs' competitiveness and development	r	0.583	< .01	Supported
IMD → SMEs' competitiveness and development	r	0.495	< .01	Supported
ECI → SMEs' competitiveness and development	r	0.529	< .01	Supported
ECI → SMEs' competitiveness and development	**β**	**0.671**	**< .001**	**Supported**

Note: r = Pearson correlation coefficient (Table 3); β = standardized regression coefficient (Table 4). N = 245.

DISCUSSION

This study looked at Iraq SMEs and how Economic Intelligence (ECI) can improve competitiveness and development. ECI was operationalized into four closely related dimensions: Identification and Acquisition of Economic Information (AEI), Analysis and Processing Information (API), Dissemination and Sharing Intelligence (DSI) and Integration of Intelligence into Managerial Decisions (IMD). Empirical results strongly support that ECI is an important organizational capability for improving competitiveness and development of SMEs. Correlation analysis showed positive and statistically significant associations between all four dimensions of ECI and SME Competitiveness and Development (SCD). Regression results showed a statistically significant positive effect of overall ECI on SCD ($\beta = 0.671$, $t = 9.024$, p less than 0.001). Finally, the regression model is statistically significant ($F = 81.416$, p less than 0.001) and explains about 44.5% of variance in competitiveness and development of SMEs (Adjusted $R^2 = 0445$). One of the most important findings is that Economic Intelligence strongly benefits SME competitiveness and development. Standard regression coefficient $\beta = 0.671$ indicates that Economic Intelligence is closely related to improvements in competitiveness and development of SMEs. Results suggest that SMEs are more likely to strengthen their competitive position if they systematically collect relevant economic information, transform that information into useful

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intelligence and disseminate that intelligence within the organization and incorporate intelligence into managerial decisions. Results are consistent with contemporary understanding that Intelligence is a strategic capability of an organization rather than just an activity of gathering information. In the context of SMEs, simply having access to information is unlikely to generate competitive benefits unless organizations have the ability to interpret information and translate it into action. Structure adopted in this study therefore explains very well how Economic Intelligence creates value. Identification and acquisition lay the informational foundation; analysis and processing convert information into meaningful knowledge; dissemination ensures intelligence reaches relevant actors in the organization; integration of management turns intelligence into strategic and operational decisions. Results align closely with Isichei et al. (2023) who found competitive intelligence has a strong positive effect on export performance of small and medium enterprises (SMEs). Their study also showed learning orientation partially mediates the relationship between competitive intelligence and performance: intelligence becomes more valuable when organizations can learn and act on information they acquire. Results here go further by showing that positive impact of intelligence is not just about performance but also touches broader competitiveness and development in emerging markets. Results also strongly align with Wu et al. (2023) who looked at competitive intelligence and dynamic capabilities among SMEs in Shanghai. Results showed practices of competitive intelligence lead to development of dynamic capabilities which supports SMEs ability to adapt to a competitive business environment. This is especially relevant for Iraq where SMEs operate in high levels of environmental uncertainty and therefore need capabilities that allow them to identify changes in the market, recognize opportunities and anticipate threats and adjust strategies accordingly. This captures the essence of the original text while making it sound more natural. Results further shed light on mechanisms underlying overall relationships. Among Economic Intelligence dimensions, AEI and API showed the strongest correlation ($r = 0.682$, $p < 0.01$). IMD also strongly correlates with DSI ($r = 0.623$, $p < 0.01$) and API ($r = 0.544$, $p < 0.01$). Results suggest that EI is a process that is interrelated rather than a collection of independent activities. Results also suggest that collecting economic information without sufficient analytical capabilities has limited strategic value. Sophisticated analysis alone will not necessarily contribute to competitiveness unless resulting intelligence is disseminated and incorporated into managerial decisions. Ragazou et al. (2023) also support this interpretation. They stress importance of Business Intelligence for better decision making and competitive advantage among small and medium enterprises (SMEs). Their analysis also highlights growing relevance of integrated intelligence and analytics solutions and stresses importance of converting organizational knowledge and information into useful managerial capabilities. Recent evidence from SMEs in developing countries also emphasizes the importance of turning information into managerial action. Anjaningrum et al. (2024) looked at SMEs in East Java that are part of the creative economy and found that Business Intelligence does not directly improve performance; rather benefits

emerge through learning within organizations and innovation. Results differ from ours but these studies complement each other. Iraqi evidence suggests Economic Intelligence itself directly correlates strongly with competitiveness and development while Indonesian evidence indicates that learning and innovation strengthen or mediate how intelligence leads to performance outcomes. This difference may be explained by differences in conceptualizing intelligence, characteristics of SME populations and institutional and economic environments firms operate in. In this study Economic Intelligence incorporates acquisition of information as well as dissemination and explicit integration into managerial decisions. Measurement model captures a broader organizational process through which intelligence turns into action. Results are especially important against the uncertain operating environment SMEs face. Generally, SMEs have fewer financial, technological and human resources compared to large enterprises and are thus more vulnerable to sudden preferences of customers, strategies of competitors, regulations, technology and market conditions. Rajala and Tidström (2022) show that how SMEs position themselves relative to competitors materially conditions the performance returns to such external orientation. Recent evidence from China also supports this interpretation. Raguseo et al. (2020) found that the returns to analytics capability are contingent on industry concentration and firm size, indicating that intelligence effects on SME performance operate through internal efficiency and structural conditions. Their results show that firms benefit especially from intelligence capabilities when they face intense competition and uncertainty. This present study adds to this evidence by showing Economic Intelligence has a strong overall effect on competitiveness and development for small and medium enterprises (SMEs) in Iraq. Iraq brings an important new dimension to this literature. Results suggest that SMEs can benefit from Economic Intelligence not just as a technological capability but as a broader strategic capability that includes acquisition of information, interpretation of analysis, communication within organizations and utilization by managers. This distinction is especially important for SMEs that lack resources to implement sophisticated Business Intelligence platforms but can still develop practices that gather structured information, monitor markets and follow routines of analysis and sharing internal information. Recent research by Isichei et al. (2023) also finds that competitive intelligence directly affects export performance for small and medium enterprises (SMEs). They find that learning orientation partially mediates this relationship. Results suggest that intelligence creates value by strengthening an organization's capacity to learn, adapt and modify practices. Wu et al. (2023) also report that competitive intelligence contributes to development of dynamic capabilities that allow SMEs to adjust to competitive environments. Our study extends these results in three ways. First, we focus specifically on Economic Intelligence which stresses relevant economic and environmental information for managerial decisions rather than limiting intelligence to competitors. Second, we incorporate four stages of the intelligence process: AEI, API, DSI and IMD and recognize that intelligence is a continuous organizational process. Finally, we provide empirical evidence from Iraq

which is underrepresented in empirical literature on intelligence and competitiveness among SMEs. Anjaningrum et al. (2024) findings bring an important qualification. Evidence they present suggests Business Intelligence does not have an automatic direct effect on SME performance and that learning within an organization and innovation are important mechanisms through which intelligence leads to performance improvements. This means that positive direct relationship found here should not be taken to mean that simply collecting economic information is sufficient. Results should instead be seen as evidence that integration capability of intelligence is important, particularly one that includes analysis dissemination and managerial integration, and this integration leads to higher competitiveness and development for SMEs. Results carry several theoretical implications. First, they support the view that Economic Intelligence is a strategic capability of an organization that contributes to competitive advantage. The strong relationship between ECI and SCD shows that information capabilities can be transformed into organizational results when firms develop mechanisms for processing and applying intelligence. Second, results strengthen relevance of explanations based on capabilities for competitiveness of small and medium enterprises (SMEs). The strong correlation between ECI and SCD (r = 0.529, p less than 0.01) along with significant regression coefficient suggests Economic Intelligence represents potentially valuable intangible capability. This is especially important for SMEs because capabilities in information and analysis can bring strategic benefits without necessarily needing the financial scale of large companies. Third, findings also suggest practical implications for Iraqi SME managers and policymakers. Managers should establish systematic procedures for monitoring economic conditions, customer needs, competition, suppliers, regulatory changes and opportunities in technology and the market. Most important of all, these procedures should go beyond collection of information to include analysis, internal dissemination and explicit integration of intelligence into managerial decisions. For policymakers, programs supporting SMEs should therefore include training in analysis of information, market intelligence, digital analytics, strategic forecasting and evidence-based decision making. Programs of this kind could help SMEs develop intelligence capabilities without requiring large investments in sophisticated infrastructure. Results also point to value in developing institutional mechanisms that improve access by SMEs to reliable economic and market information. Overall, this study adds to growing literature by showing Economic Intelligence strongly correlates with competitiveness and development of SMEs in Iraq. Model explanatory power (Adjusted $R^2 = 0.445$) is especially noteworthy: Economic Intelligence accounts for a large proportion of variation in competitiveness and development of SMEs but other organizational and environmental factors still explain a large proportion. Another contribution of this study is linking four stages of the process of Economic Intelligence to outcomes for SMEs. Results show Intelligence cannot be thought of just as acquiring information; effectiveness depends on a continuous process of identification and acquisition (AEI), analysis and processing (API), dissemination and sharing (DSI) and integration into managerial decisions

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(IMD). This integrated view helps explain why Economic Intelligence can serve as a source of competitiveness and development for SMEs. Future research could further extend this current model by investigating whether organizational learning, innovation, dynamic capabilities, digital transformation or entrepreneurial orientation mediate or moderate the relationship between Economic Intelligence and competitiveness of small and medium enterprises (SMEs). Longitudinal and studies across different countries would also help determine whether strength of this relationship varies among institutional environments and stages of development. In summary, results provide strong empirical support that Economic Intelligence is important for competitiveness and development of Iraqi SMEs. Evidence broadly aligns with recent international research on competitiveness and Business Intelligence and also extends literature by showing relevance of an integrated process of Economic Intelligence in an Iraqi SME context.

CONCLUSIONS

This study looked at how Economic Intelligence (ECI) helps small and medium sized enterprises (SMEs) in Iraq perform better and develop. Economic Intelligence is conceptualized as a capability that has four dimensions: Identification and Acquisition of Economic Information (AEI), Analysis and Processing Information (API), Dissemination and Sharing Intelligence (DSI) and Integration of Intelligence into Managerial Decisions (IMD). Empirical evidence from 245 observations shows clearly that Economic Intelligence is an important factor contributing to competitiveness and development of SMEs. Reliability analysis confirmed adequacy of instruments used. Alpha coefficients for the four dimensions of Economic Intelligence range from 0.656 to 0.871 while SME Competitiveness and Development scale scores 0.797. Internal consistency is satisfactory and this supports reliability of measures used in this study. Correlation analysis also shows positive and statistically significant relationships among all dimensions of Economic Intelligence and SME competitiveness and development. AEI showed the strongest correlation with SCD ($r = 0.604$, p less than 0.01) followed closely by DSI ($r = 0.583$, p less than 0.01), API ($r = 0.521$, p less than 0.01) and IMD ($r = 0.495$, p less than 0.01). Additionally, overall Economic Intelligence (ECI) was also positively and statistically significant correlated with SCD ($r = 0.529$, p less than 0.01). Results indicate SMEs that are better at identifying relevant economic information, analyzing it well, sharing intelligence internally and incorporating it into managerial decisions are more likely to achieve stronger competitiveness and development outcomes. Regression analysis further supports central proposition of this study. Economic Intelligence positively and statistically significant impacts SMEs' competitiveness and development ($\beta = 0.671$, $t = 9.024$, p less than 0.001). Overall regression model is statistically significant ($F = 81.416$, p less than 0.001) and adjusted coefficient of determination (Adjusted $R^2 = 0.445$) shows Economic Intelligence explains approximately 44.5% of variance in competitiveness and development of

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SMEs. Results show Economic Intelligence is not just about managing information but is a strategic capability for SMEs that helps them understand changes in their external environment, spot opportunities and anticipate threats and improve managerial decision making. From a theoretical standpoint, this study adds to literature on competitiveness of small and medium enterprises by showing relevance of an integrated process of Economic Intelligence in an emerging environment with challenging institutions. Rather than thinking of intelligence as simply acquiring information, findings support a process view where economic information must be acquired, analyzed, disseminated and ultimately integrated into managerial decisions. Significant association between ECI and SCD provides empirical support that Economic Intelligence is an intangible organizational capability that contributes positioning and sustainable development. Practical implications also flow from this research for Iraqi managers and policymakers of SMEs. Managers should set up systematic mechanisms for monitoring developments in economics, markets, technology, regulation and competition and strengthen employees' skills at analyzing and interpreting information. Above all, economic intelligence should be integrated into strategic and operational decision making rather than being considered as a separate gathering activity. Policymakers and institutions that support small and medium enterprises can contribute by developing training and building capacity in economic intelligence, market analysis, digital analytics, strategic forecasting and evidence-based decision making. Improving SME access to reliable information on the economy and markets further strengthens their ability to deal with uncertainty and to take advantage of new opportunities. Contributions notwithstanding, this study has some limitations. First, the empirical analysis uses a cross-sectional design which limits the ability to establish causal relationships over time. Second, the study focuses on SMEs operating in Iraq so results may not directly generalize to SMEs in other institutional or economic contexts. Third, analysis looks directly at the relationship between economic intelligence and competitiveness and development of SMEs without considering important mechanisms that might mediate or moderate. Future research should address these limitations by using longitudinal designs and comparative studies in different countries or regions. Future research could also look into whether organizational learning, innovation capability, dynamic capabilities, digital transformation, entrepreneurial orientation and environmental uncertainty mediate or moderate the relationship between Economic Intelligence and competitiveness of small and medium enterprises (SMEs). Future research could also look at individual effects of AEI, API, DSI and IMD on different performance dimensions of SMEs such as innovation, productivity, expansion into markets, financial performance and sustainability as well. Overall results show that Economic Intelligence is a very important and strategic contributor to competitiveness and development of Iraqi SMEs. Evidence shows SMEs can strengthen their competitive position not just by accessing economic information but by developing integrated capability to acquire, analyze disseminate and apply intelligence into managerial decisions. Strengthening

capabilities in Economic Intelligence therefore looks promising as a way to improve resilience, competitiveness and long-term development of SMEs in Iraq.

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