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Article

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MANAGEMENT | REVIEW ARTICLE

The key criteria that determine the degree to which management's use of competitive intelligence

Ahmed Khalid Alrashedi^{1*}

Abstract: This study highlights the critical significance of competitive intelligence (CI) associated to the development of agile management practices within organizations. It is necessary to establish the scheme in order to identify the key characteristics that affect the degree to which management makes use of competitive intelligence. strategic management theory was adopted for this study. A “Decision Making Trial and Evaluation Laboratory” (DEMATEL) method was utilised in order to carry out an investigation into the most significant factors (features) that have an effect on CI. Four different businesses that had effectively implemented competitive intelligence strategies across a variety of business divisions were utilised as case studies in order to gain an understanding of the processes that underlie this new phenomenon. The finding of the research demonstrates that “Strategy Formulation” is the most influential dimension that can determine the degree to which management makes use of competitive intelligence. The study's implication supports the idea that, in today's highly competitive and digital environment, CI strategies require clear conceptualization, and this study focuses on the growing significance of this factor in facilitating the implementation of CI strategies. The results of the study provide more evidence that, in the highly networked and digital world of today, CI strategies are becoming an increasingly vital component for companies to implement through effective strategic formulation.

Subjects: Personnel Selection, Assessment, and Human Resource Management; Human Resource Development

Keywords: competitive intelligence; organizational culture; information technology; competitors' information;; strategic formulation

1. Introduction

The marketplaces in which firms now compete are growing more chaotic and unpredictable as a direct result of the rapid pace at which technological development is progressing (Day & Schoemaker, 2016). As a result of this, obtaining CI is becoming an increasingly crucial component

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for businesses (Lin, 2016). Companies leverage CI to get actionable knowledge about themselves and their environments, which enables them to make more informed decisions about the market (Bulley et al., 2014). It is more vital for a firm's long-term existence than for the company to have a competitive advantage (Tahmasebifard & Wright, 2018). In today's highly competitive market, firms need to ensure they have ample amounts of data, information, expertise, and most crucially, intelligence in order to be successful (Niu et al., 2021). As a consequence of this, managers are required to cope with a diverse array of potential opportunities and risks (Chawinga & Chipeta, 2017). Having access to more information might make it easier to make decisions, but sifting through all of that data and picking out the most relevant pieces is not a simple task. Researchers such as Olszak (Olszak, 2014) suggest that CI could be utilised to detect an approaching disturbance in the sector before it occurs.

In an effort to address the research gap that has been found in the existing body of research, this study found it crucial to further analyse the links that exist between concepts such as "Knowledge Sharing," "Information Technology," "Organizational Culture," "Competitors' Information," and "Strategy Formulation" (Asghari et al., 2020; Cavallo et al., 2021).

The fundamental objective of competitive intelligence is to acquire knowledge regarding the activities of competing firms, in order to evaluate their strengths and weaknesses in relation to one's own organisation (Bulley et al., 2014). Monitoring the actions of competitors within the market can aid in enhancing the positioning of one's company, predicting forthcoming market trends, and formulating prudent strategic choices (Cavallo et al., 2021). Therefore, it is noteworthy that the primary determinants of achieving the purpose of competitive intelligence are Knowledge Sharing (KS), Information Technology (IT), Strategy Formulation (SF), Organisational Culture (OC), and Competitors' Information (CI), as revealed by research. To date, no research has been conducted to determine the means by which one can acquire knowledge regarding the strengths, weaknesses, strategies, and actions associated with each criterion, with the aim of identifying opportunities and threats for one's own organisation.

Strategy Formulation (SF) is the process of strategy formulation, as viewed from the perspective of competitive intelligence, entails leveraging the insights and information acquired through competitive intelligence in order to create strategies that are impactful and successful (Cavallo et al., 2021).

The importance lies in competitive positioning, which involves organizations gaining an understanding of their competitors' strengths, weaknesses, and market positioning. This data provides organizations with the ability to identify potential areas for differentiation and formulate strategies to establish a favourable position in relation to their competitors.

Knowledge sharing in the context of competitive intelligence pertains to the distribution of insights, information, and findings obtained through competitive intelligence endeavors throughout an organization. The process entails the dissemination of information regarding competitors, market trends, customer insights, and strategic implications to enable well-informed decision-making throughout various departments and levels within the organization (Cavallo et al., 2021).

The primary significance of this lies in the awareness of market dynamics and cross-functional collaboration. These factors contribute to the development of a shared understanding of the competitive landscape and market dynamics within the organization. The purpose of this system is to provide timely and accurate information to all pertinent stakeholders regarding competitors, market trends, customer preferences, and industry advancements. Competitive intelligence fosters cross-departmental collaboration and knowledge exchange within an organization, encompassing departments such as marketing, sales, product development, and strategic planning. By exchanging competitive intelligence findings, teams can synchronize their endeavors, harness collective knowledge, and arrive at better-informed decisions.

Within the realm of competitive intelligence, the term Information Technology (IT) pertains to the assortment of tools, systems, and technologies employed for the purpose of gathering, retaining, manipulating, evaluating, and distributing information that is pertinent to competitors, market patterns, and strategic perspectives. Information technology (IT) plays a crucial role in facilitating efficient and effective competitive intelligence practices.

One of the key components of competitive intelligence in the field of Information Technology is its ability to facilitate the gathering and tracking of data pertaining to competitors, industry trends, and market dynamics. The system automates the information gathering process by extracting data from diverse sources, including websites, social media platforms, industry databases, and news feeds. Information technology tools have the capability to effectively monitor and analyze competitor activities, market developments, and customer behavior in real-time.

The concept of organizational culture, as viewed through the lens of competitive intelligence, pertains to the collective values, beliefs, behaviors, and norms that are present within an organization. Organizational culture encompasses the attitudes and practices exhibited by employees, the decision-making processes employed, and the overall atmosphere and working environment within an organization. In the realm of competitive intelligence, comprehending an organization's culture holds significant importance due to its potential to greatly influence the organization's capacity to gather, analyze, and employ competitive intelligence in an efficient manner.

The significance of organizational culture in competitive intelligence primarily revolves around ethical behavior. The establishment of a robust ethical culture is of utmost importance when engaging in the practice of competitive intelligence in a manner that is both ethical and compliant with the law. Organizations that prioritize a culture centered around integrity, honesty, and respect are more inclined to uphold ethical guidelines during the process of gathering intelligence. This measure serves to mitigate unethical behaviors like industrial espionage or unauthorized data collection, both of which can result in reputational harm and legal ramification (Cavallo et al., 2021).

Competitors' information, from a competitive intelligence standpoint, encompasses data, insights, and knowledge pertaining to the activities, strategies, strengths, weaknesses, and overall performance of rival organizations within the marketplace. The process entails the collection and examination of data pertaining to competitors' offerings, pricing, marketing strategies, distribution networks, partnerships, financials, and other pertinent factors that may impact their competitive standing (Cavallo et al., 2021).

The acquisition of competitors' information in competitive intelligence is significant due to its ability to provide valuable insights into the overall market landscape. This technology aids organizations in gaining insights into market trends, customer preferences, and emerging opportunities. Through the process of analysing the offerings of competitors, organizations have the opportunity to identify gaps within the market. By doing so, they can strategically capitalize on these gaps, effectively differentiate their own products or services, and develop targeted positioning strategies to appeal to specific customer segments

Further justification lies with the fact that in today's increasingly competitive market, it is often the case that the difference between success and failure for many organisations functioning in that environment is whether or not those businesses have an understanding of the insight and the dynamics of CI (Wu et al., 2023). This is due to the widespread belief that gathering CI is a vital component of establishing a successful competitive strategy, which will, ultimately, lead to the formation of a clear competitive edge in the business world (Jafarei et al., 2023). In addition, the CI programmes that businesses of all sizes use to gain a competitive advantage come with a number of drawbacks that need to be addressed before they can be considered effective (de Sousa Lopes et al., 2023).

Given that numerous earlier studies have used DEMATEL for the purpose of analysing the cause-and-effect relationships among the constituents of a system, the purpose of this study is to make a contribution to the ongoing conversation by investigating whether or not and how CI is related to the effective management of enterprises as well as the factors that are associated to that. Considering that numerous earlier studies have used DEMATEL for the purpose of analysing the cause-and-effect relationships among the constituents of a system, this study's purpose. In addition, the purpose of the study was to devise a system for determining the primary factors that determine the extent to which management makes use of CI. This was also one of the study's goals and the research contributions are as follows:

- One of the notable contributions of this study is the identification of the essential criteria linked to the comprehension of Competitive Intelligence (CI), along with the methodologies and rationale that support efficient CI management.
- The research aided in the development of an approach that is well-suited to the unique characteristics of the problem and the analytical requirements for assessing the effects of CI. The accomplishment was achieved through the development of a DEMATEL method that is well-suited to the analytical nature of CI criteria analysis.
- The research emphasized the potential of CI as a versatile tool and framework that can be employed for training, assistance, and integration into an efficient management strategy. The paper outlines the key criteria for competitive intelligence (CI) as the "strategic formulation," as evidenced by the demonstration. Furthermore, this study makes a valuable contribution by presenting a comprehensive collection of empirical data pertaining to the implementation of continuous improvement (CI) approaches and the various factors that impact the degree of success achieved by organizations in utilizing these methodologies.

1.1. Knowledge sharing

The criteria that "knowledge sharing" was adopted from (Cavallo et al., 2021) as a Competitive Intelligence variable, and this research conceptualized that it has the potential to be an important factor in the realm of competitive intelligence. The main reason for this claim lies with the fact that "Knowledge" can be a driving force behind the decision. The most significant aspect connecting "knowledge sharing" and "Competitive intelligence" is the fact that the former is required in order to achieve a position of superiority over the latter. That is, knowledge is required to make an informed intelligence. In addition, efficient information sharing improves an organization's capability to gather, process, and utilize intelligence, which in turn influences the organization's attempts to maintain competitive intelligence.

In addition, "knowledge sharing" allows individuals inside an organization to contribute their perspectives, experiences, and areas of expertise, which provides access to a wider range of information than would otherwise be possible as well as a technique based on collaboration that gives users access to a wider variety of information viewed from a variety of angles, which can assist in the process of acquiring complete competitive intelligence. Another rationale for using "knowledge sharing" as the primary criterion for competitive intelligence is due to the fact that "knowledge sharing" makes it possible to more quickly disseminate intelligence, and timely distribution of information is an essential component of competitive intelligence. Another reason for using "knowledge sharing" as the primary criterion for competitive intelligence is that it improves analysis and interpretation. Knowledge retention and organizational learning contribute to documenting and disseminating competitive intelligence across teams and organizations. Another justification for utilizing "knowledge sharing" as the key criterion for competitive intelligence resides in the fact that invention and adaptation can be acquired and in turn to play an essential part of competitive intelligence.

1.2. Strategy formulation

Strategy Formulation is adopted from (Cavallo et al., 2021) as the criteria for competitive intelligence. The rationale for employing "Strategy Formulation" as the primary criterion for competitive intelligence stems from the fact strategy formulation encompasses the establishment of explicit

goals and the identification of methods by which an organization can attain a competitive edge. Through the integration of competitive intelligence within the process of strategy formulation, organizations are able to effectively align their objectives with the prevailing market conditions, competitor activities, and emerging trends. Another rationale for employing “Strategy Formulation” as the primary criterion for competitive intelligence pertains to the provision of insights into both market opportunities and threats. One additional rationale for employing “Strategy Formulation” as the primary determinant for competitive intelligence pertains to the provision of comprehensive insights into competitors’ strengths, weaknesses, strategies, and market positions.

Another rationale for employing “Strategy Formulation” as the primary criterion for competitive intelligence pertains to the inclusion of risk assessment and the creation of contingency plans to alleviate them. One additional rationale for employing “Strategy Formulation” as the primary criterion for competitive intelligence pertains to the imperative of resource allocation within organizations to effectively attain their strategic goals. Another rationale for employing “Strategy Formulation” as the primary criterion for competitive intelligence pertains to the continuous nature of strategy formulation, which necessitates vigilance and adjustment in response to the evolving competitive environment. This enables individuals or organizations to assess the efficacy of their strategies, recognize required modifications, and adapt their methodologies in order to sustain competitiveness.

1.3. Organizational culture

Organizational Culture is used as a competitive intelligence criterion in (Cavallo et al., 2021) and is adopted in this study for further investigation. The rationale for utilization of “Organizational Culture” as a primary criterion for competitive intelligence stems from the recognition that a culture that places importance on learning and curiosity fosters an environment where employees are motivated to actively pursue and exchange intelligence. One additional rationale for employing “Organisational Culture” as the primary determinant for competitive intelligence relates to the imperative nature of fostering a culture that promotes collaboration and knowledge sharing in order to achieve effective competitive intelligence. Another additional rationale for employing “Organizational Culture” as the primary determinant for competitive intelligence pertains to the fundamental importance of trust and openness within the organizational culture for the effective implementation of competitive intelligence.

One additional rationale for employing “Organisational Culture” as the primary criteria for competitive intelligence pertains to the influence of organizational culture on the level of strategic alignment and support for competitive intelligence endeavours. A culture that places significance on and comprehends the significance of competitive intelligence establishes a connection between it and the strategic objectives of the organization. Another additional rationale for employing “Organisational Culture” as the primary determinant for competitive intelligence pertains to the frequent necessity of undertaking risks and engaging in experimental endeavours to acquire valuable insights and maintain a competitive advantage over rivals. The final rationale for employing “Organisational Culture” as the primary determinant for competitive intelligence pertains to the role it plays in establishing ethical conduct and integrity within competitive intelligence activities. A culture that places importance on ethical behavior ensures that the collection, analysis, and utilization of competitive intelligence are conducted in accordance with legal and ethical parameters.

1.4. Competitors’ information

The primary rationale for employing “Competitors” Information” as a fundamental criterion for competitive intelligence stems from the emphasis placed on acquiring and evaluating data pertaining to competitors’ strategies. It was used in (Cavallo et al., 2021) and also adopted in this study to investigate if it is a key criterion among other criteria that are influencing competitive advantage. Another main rationale for employing “Competitors” Information” as the primary

criterion for competitive intelligence pertains to the fundamental nature of competitive intelligence, which entails the surveillance and assessment of competitors' performance. One additional rationale for employing "Competitors" Information" as the primary criterion for competitive intelligence pertains to monitoring of market trends, technological advancements, and industry innovations instigated by rival companies. By closely monitoring these trends, organizations can effectively recognize emerging opportunities.

One additional rationale for employing "Competitors" Information" as a primary criterion for competitive intelligence stems from the inclusion of customer insights, preferences, and behaviors influenced by competitors within the realm of competitive intelligence. One additional rationale for employing "Competitors" Information" as the primary criterion for competitive intelligence stems from the significance of such information in evaluating market positioning and identifying prospects for competitive differentiation. The final rationale for employing "Competitors" Information" as the primary criterion for competitive intelligence pertains to the capability it affords organizations to proactively anticipate and proficiently address competitive challenges. The availability of up-to-date and precise data regarding competitors empowers organizations to promptly and strategically adapt to evolving market dynamics

1.5. Information technology

The utilization of "Information Technology" as a primary criterion for competitive intelligence is justified by the capability of IT systems to collect and aggregate extensive volumes of data from diverse internal and external sources. This variable is also adopted from (Cavallo et al., 2021) as a criteria of Competitive Intelligence. One additional rationale for employing "Information Technology" as the primary criterion for competitive intelligence pertains to the utilization of IT infrastructure, which offers storage and management solutions for the storage and organization of intelligence data. Competitive intelligence yields a considerable volume of data encompassing competitor profiles, market trends, customer insights, and historical performance data. One additional rationale for employing "Information Technology" as the primary criterion for competitive intelligence pertains to the utilization of software, which facilitate the application of advanced data analysis techniques in the field of competitive intelligence.

Another additional rationale for employing "Information Technology" as the primary determinant for competitive intelligence pertains to the capability of IT solutions to facilitate automation and real-time monitoring of competitive intelligence. Automated tools possess the capability to monitor and analyze various aspects of competitors' online activities, including but not limited to social media mentions, news articles, and industry updates. By engaging in ongoing surveillance of these sources. One additional rationale for employing "Information Technology" as the primary criterion for competitive intelligence pertains to the facilitation of collaboration and knowledge exchange among individuals and teams engaged in competitive intelligence. Technological advancements facilitate cross-functional collaboration by enabling stakeholders from various departments to contribute their specialized knowledge, perspectives, and analytical skills.

2. Related work

The primary objective of competitive intelligence is to get an understanding of the activities of one's competitors in order to determine opportunities and potential risks for one's own organization (Bulley et al., 2014). Organization will be able to better position themselves, predict future market trends, and make strategic decisions if they remain updated about the activities and market position of their competitors (Cavallo et al., 2021).

"Knowledge Sharing (KS)," "Information Technology (IT)," "Strategy Formulation (SF)," "Organisational Culture (OC)" and "Competitors" Information" (CI), are the factors that have an effect on "Competitive Intelligence" (CI), as stated by Cavallo et al. (2021). Cavallo et al.'s (2021) research, on the other hand, does not provide a definitive answer to the question of which of them is the most important, nor does it shed light on the hierarchical disparities that exist between them. Because the primary goal of competitive intelligence is to gain an understanding of the

advantages, disadvantages, tactics, and activities of one's competitors in order to discover opportunities and dangers for one's own organisation, the term "Competitive Intelligence" is occasionally abbreviated to "CI." It is crucial to stay updated about the key factors and the degree to which they have an impact in order to better position competitors, anticipate market trends, and make strategic decisions. When it comes to the implementation of CI in an organisation, knowing the strength of each criterion as a factor that affects the CI will assist to offer emphasis on the level of control that is already there. This is because understanding the strength of each criterion as a factor that influences the CI.

Based on an exhaustive online bibliometric search, it appears that there is currently a lack of studies specifically addressing the identification of hierarchical criteria for variables' level of contribution to the "CI". The study conducted by Cavallo et al. (2021) is highly relevant to the current research. Similarly, the work of Asghari et al. (2020) examine the significance of various factors, namely knowledge sharing, competition information, information technology (IT), and organizational culture, in facilitating effective competitive intelligence (CI). Additionally, it seeks to explore the influence exerted by these factors on the overall CI process. This paper employed a quantitative research methodology. The study's findings provide evidence supporting the model's validity in the context of evaluating confidence intervals. Furthermore, the results indicated that the inclusion of competitor information significantly influenced competitive intelligence. Furthermore, the results indicated that information technology (IT) has a significant and positive impact on competitive intelligence (CI). The aforementioned interpretation was substantiated by the results obtained. The research demonstrated that the impact of organizational culture on continuous improvement (CI) was both positive and significant. Furthermore, The study conducted by Cavallo et al. (2021) also possesses a practical component as it was carried out within the context of four companies located in Brazil. Moreover, upon scrutinizing the profiles of various companies based on the publicly accessible information they have provided online, within the limitations of the search parameters, no company has been identified that discloses its "Competitive Intelligence," which is the subject of this research analysis

There has been a great deal of research done in the past on CI by a wide variety of multi-disciplinary fields covering a wide range of events using a great deal of different analytical approaches. On the other hand, there aren't that many studies that use DEMATEL analysis and CI together. The research work that was done by Malekzadeh et al (2016), Naeini et al. (2019), and Asadi et al. (2023), among others, are essential to this current study to review.

Malekzadeh et al. (2016) reveals that multifaceted nature of organisational intelligence makes it a very effective management tool. Because of this, the study analysed the expert panel opinion based on the opinions of Iranian university professors using DEMATEL. As a result, it made use of eight aspects, including "structural," "cultural," "strategic," "communicational," "informational," "functional," "behavioural," and "environmental" factors. According to the findings, the "Structural", "Cultural", "Strategic", "Informational", and "environmental" dimensions are the cause dimensions, and the "Behavioral" and "Communicational" aspects are the effect dimensions.

It has been established by Naeini et al. (2019) that competitive advantage is an important issue that has been emphasized in management and strategic planning over the past few years. The purpose of this research was to conduct an exhaustive analysis of competitive advantage, as well as to design and explain a hybrid model of competitive advantage in Iran's food industry, based on Bourdieu's capital theory and competitive intelligence, using fuzzy Delphi and ISM-Gray DEMATEL. According to the findings, companies will be unable to gain a competitive advantage

Asadi et al. (2023) establish that Industry 4.0 as a digital transformation has become a universal trend and is essential for manufacturing firms due to the automation, agility, and flexibility that it provides. On the other hand, research into the factors that influence the adoption of industry 4.0 in manufacturing industries, particularly automotive sectors, has not been carried out to a sufficient

degree. As a result, the research conducted an in-depth study to identify and evaluate the essential factors impacting the decision to adopt industry 4.0 using the following dimensions: “technological,” “organisational,” “environmental,” and “human factors.” This was done in order to satisfy the objectives of the research. The data were analysed using techniques such as DEMATEL and Fuzzy Rule-Based, and the study came to the conclusion that organisational and environmental factors had a significant impact on the adoption of industry 4.0. The findings can help industrial practitioners and managers identify factors that lead to the adoption of industry 4.0.

Taking into consideration the findings of some studies that concentrate on competitive intelligence, a significant amount of valuable insight was revealed. Despite some slight variations, the most typical activities in CI are planning, gathering, analysing, and disseminating the gathered information. Quite frequently, these activities are considered to be a component of a cycle that starts with a request for information and culminates with the initial inquirer being provided with the information that was requested. However, Safa et al. (2015) point out that many organisations adopt informal, short-term CI practises rather than formal, long-term ones. This is despite the fact that the study implies that a structured CI process will increase a company’s performance (Sahin & Bisson, 2020; Sewdass & Toit, 2014). Data can be collected from a wide number of sources, including human sources as well as official and informal ones (Mina et al., 2014). Since time is of the essence, it is imperative to have data mining tools that can rapidly extract relevant information and provide some degree of analytical capability (Lan et al., 2018; Peral et al., 2017).

The majority of the research that has been done on CI has concentrated on accessible technology and various technical challenges. In spite of the fact that Caseiro and Coelho (Caseiro & Coelho, 2019) characterise intelligence as a social process, they underline the importance of ensuring that social components such as organisational and individual traits are not neglected. As a result of this, a number of social and environmental elements have been investigated throughout the course of this research project and will be described as contextual components below. The individual’s perception of their own personal responsibilities for environmental scanning and the manner in which they communicate with others is an essential component of information awareness. According to the definitions provided by, there are five main groups of CI managers (He et al., 2015).

The complexity and unpredictability of an organization’s environment has a significant bearing on both the organisational structure and the decision-making process inside that organisation. According to research by Negulescu (2014), when faced with rapidly shifting restrictions, contingencies, and possibilities, managers adopt a more outward orientation of information. Notably, it is becoming increasingly difficult to locate data and information that is considered to be of “quality,” which is becoming a key worry for firms operating in today’s modern society. In addition to this, the concept of competition is no longer confined to specific industries but rather spans all ecosystems (Jacobides et al., 2018). Now more than ever, the company’s capacity to learn and transform data into insight is greatly facilitated by CI (Ranjan & Foropon, 2021; Wolf & Floyd, 2013). They evaluate the practicability of the plan and recognise when a particular strategy is no longer practicable. The application of corporate intelligence (CI) can be beneficial to a business’s strategy generation process in a number of different ways, which can ultimately result in the organisation gaining strategic benefits. Although there has been an increase in the recognition of the strategic relevance of CI, the current research fails to capture how CI is integrated into the overall strategy of organisations and within effective management.

3. Research methodology

The primary purpose of this study is to identify the factors that most affect the efficacy of competitive intelligence’s implementation and to assess the effects of competitive intelligence’s use. This led to the selection of a unique methodological approach, the “Decision Making Trial and Evaluation Laboratory” (DEMATEL), with the goals of determining what criteria most significantly affect the effectiveness of competitive intelligence and the interrelationship among the efficacy of

internal components of competitive intelligence. To accomplish this, the research looked at four companies that had successfully implemented a CI business unit. They were picked because they have made a formal commitment to using CI methods. Experts from the area of CI in those company were selected for this study. In order to guarantee that the experts are informed and experienced with the phenomena under study, the research relied on a technique called “purposeful sampling”. Experts are evaluated using structured interviewed focus and a Likert-scale DEMATEL approach to indicate the extent to which each of five criteria (“Knowledge Sharing,” “Information Technology,” Strategy Formulation,” ‘Organizational Culture,’ and ‘Competitors’ Information”) pertains to their professional experiences.

The interview session consists of a condensed session of the total of 30 interviews between August 2019 and March 2020. For each firm, five semi-structured interviews were conducted with the company’s top executives and analysts to get a more thorough insight into the internal dynamics across all levels of the organisation. In the semi-structured interviews, there were several separate components. “*How does a corporation compete in a market?*” is a question that was addressed in the first portion of this report. Is there a CI plan in place at your company? The question is, “*How do you implement CI?*” The research also looked at how much CI is utilised in strategy development, asking, “*How much CI are you using in your strategy formulation?*”. Then this follows by the DEMATEL version of the evaluation.

The experts’ decision-making will be facilitated by the availability of multiple-choice responses. Thus, the study draws on a conceptual map of the extracted criteria to identify the most important factors in the review process and provide insight into the connections among the various measures. Here in DEMATEL, the research build and identify connection between assessment criteria to draw conclusions about the nature of the aforementioned cause-and-effect dynamic. For this reason, this technique is utilised to map out the relationships between the various evaluation metrics. By assigning weights to the various types and strengths of interactions between criteria, the technique helps to reveal the ways in which the criteria influence one another, with the criterion with the highest weight being assumed to be the cause criterion and the criterion with the lowest weight being the affected criterion. The steps below are what form its implementation.

Step 1. Collecting expert opinion: This study makes use of a questionnaire that was produced by combining the five criteria that were taken from Cavallo et al. (2021), and Asghari et al. (2020) (*Knowledge Sharing, Information Technology, Strategy Formulation, Organizational Culture, and Competitors’ Information*) and it includes multiple preferences based on the Likert scale of inter scores: 0 = “No Influence”, 1 = “Low Influence”, 2 = “Medium Influence”, 3 = “Extreme Influence”, and 4 = “High Influence”.

To provide a comprehensive elucidation of the rationale behind selecting these five specific criteria as the primary focus of the research, it is imperative to establish a clear justification and theoretical foundation for their selection, while also highlighting their pertinence to the overall research objectives.

The primary aim of competitive intelligence is to systematically collect, evaluate, and apply data pertaining to competitors and the competitive environment, with the purpose of attaining a strategic edge within the market. Competitive intelligence entails the methodical acquisition and assessment of information pertaining to competitors’ actions, capacities, advantages, disadvantages, and intentions, with the aim of comprehending their strategies, predicting their actions, and making well-informed choices. Cavallo et al. (2021) have conducted empirical research that demonstrates the influence of all five factors on Competitive Intelligence. However, the study conducted by Cavallo et al. (2021) did not specify the specific factors that had the greatest impact.

Therefore, the purpose of this research is to investigate and determine which factors contribute the most to the influence.

Further justification of adopting these criteria lies with the work of (Asghari et al., 2020) Asghari et al. (2020) which can be expressed in the following:

- One of the selected criteria, Strategy Formulation (SF), can guide Competitive Intelligence (CI) efforts by assisting organizations in developing effective strategies through the provision of insights into the competitive environment. Furthermore, it can aid in the identification of market trends, competitor positioning, as well as emerging opportunities and threats. However, the extent to which it is capable of achieving such outcomes remains uncertain and lacks quantifiable measurement. This research has chosen to focus on “Strategy Formulation (SF)” as a means of assessing its impact on Competitive Intelligence.
- The utilization of Competitors’ Information (CI) as a selected criterion can facilitate comprehension of how the competitive environment allows organizations to strategically position their products or services. Competitive intelligence plays a crucial role in identifying market gaps, thereby offering opportunities for differentiation. This entails comprehending competitors’ information and devising strategies to better fulfill customer requirements compared to rival firms. However, the extent to which Competitors’ Information (CI) can achieve this outcome remains uncertain and lacks a standardized measure. This study opted to examine “Competitors” Information (CI)” as a means of assessing its impact on Competitive Intelligence.
- The criterion of Knowledge Sharing (KS) has the potential to effectively guide innovation and product development processes by identifying market gaps and unfulfilled customer needs. The identification of emerging technologies, trends, and customer preferences aids organizations in maintaining a competitive edge over their rivals. However, the extent to which Knowledge Sharing (KS) can achieve this outcome is uncertain and lacks quantifiable measurement. This research has chosen this particular variable to assess its level of contribution to competitive intelligence.
- The utilization of Information Technology (IT), as a chosen criterion, can facilitate the collection, analysis, and processing of valuable information in order to enhance the ability to make informed decisions. This aids in the evaluation of the potential consequences of competitor actions, the assessment of risks, and the identification of potential partnerships or acquisitions. However, the extent to which Information Technology (IT) can accomplish this remains uncertain and difficult to quantify. This research has chosen to examine the extent to which Information Technology (IT) contributes to Competitive Intelligence.
- The criterion chosen, Organisational Culture (OC), pertains to the essential need for cultivating a culture that facilitates understanding of competitors’ customer bases, target markets, and levels of customer satisfaction. This cultural phenomenon facilitates the comprehension of customer preferences, enhances the customer experience, and enables the formulation of efficacious marketing and sales strategies within organizations. However, the extent to which Organisational Culture (OC) can achieve this outcome remains uncertain and lacks a standardized measure. This research has chosen to examine the extent to which Organisational Culture (OC) contributes to Competitive Intelligence.

The DEMATEL recommendations served as the basis for the selection of twelve sample experts for this study. Some of these experts took part in the interview session. This sample selection can be supported by the fact that in DEMATEL techniques, which rely on the knowledge of experts rather than statistics, its evaluation only needs between 10 and 30 participants in order to be accurate (Bavafa et al., 2018).

The objective of the activity was to have experts to score the criteria based on the components that comprised each criterion. These components were all intended to provide the expatriate with a greater degree of influence over their personal experience. As a result, x_{ij} is a value that shows the importance that experts place on each criterion’s influence, where i and j are the cause and effect criteria respectively. Thus for each expert’s response is obtained as $n = 1, 2, 3 \dots, n$ and an $n \times n$ non-negative direct relation matrix is form by equation 1:

$$x^y = \begin{bmatrix} x_{ij}^y \end{bmatrix}_{n \times n} \quad (1)$$

where y represents the number of representation of each expert with $1 \leq y \leq q$ as a result the equation generate matrix q for x^1, x^2, \dots, x^q where q is the number of experts. Furthermore, the average aggregated decision matrix for all the expert $Z = [z_{ij}]$ is presented by equation 2:

$$Z_{ij} = \frac{1}{q} \sum_{y=1}^q x_{ij}^y \quad (2)$$

Step 2: Creating the normalized direct relation matrix: The normalized direct relations matrix D is generated by equation 3:

$$D = \max \left(\max_{1 \leq i \leq n} \sum_{j=1}^n z_{ij}, \max_{1 \leq j \leq n} \sum_{i=1}^n z_{ij} \right) \quad (3)$$

Because of this, the end effect will be that each cell in matrix Z will have a value that falls somewhere in the range $[0, 1]$.

Step 3: Creating the total relation matrix: by raising the normalized initial direct-relation matrix D to the power of m , where m is indirect influence D^m , we obtain the total relation matrix T , which represents the total influence generated by the participant's response. Since the total relation is the sum of $D + D^2 + \dots + D^m$ hence D^m , will converge to zero, we know that the total relation matrix T is equal to the original direct-relation matrix D , then the total relation matrix $T = D + D^2 + \dots + D^\infty$ is $T = \lim_{m \rightarrow \infty} (D + D^2 + D^3 + \dots + D^m) = D(I - D)^{-1}$ thus

$$T = D(I - D)^{-1} \quad (4)$$

where I is an $n \times n$ identity matrix.

Step 4: Creating the rows and columns of matrix: The vectors of the rows and columns that make up the complete relation matrix. If the total of the rows of matrix T and the total of the columns of matrix T are represented by the vectors r and c , respectively, then if the following holds:

$$r = [r_i] n \times 1 = \left[\sum_{j=1}^n t_{ij} \right]_n x_1 \quad (5)$$

$$c = [c_j] 1 \times n = \left[\sum_{i=1}^n t_{ij} \right]_1 x_n \quad (6)$$

If j is equal to i then the sum of r_i and c_j will indicate the impacts that criterion i has on j , and if j is not equal to i then the sum will show the total effects given and received by criterion i while the difference will show the net effect that criterion i adds to the system. On the other hand, if it is a positive value, criterion i acts as a net cause, and if it is a negative value, it acts as a net effect. If $r_j - c_j$ is positive, then the criteria have an overall impact on the other criteria, and it can be categorized under the cause group. On the other hand, if $r_j - c_j$ is negative, then the criteria in question are being swayed by the other criteria as a whole and should be categorized as the "effect." Therefore, $r + c$ is known as the "Prominence," while $r - c$ is known as the "Relation".

Step 5: Creating a threshold value (α) to generate an interaction diagram. In order to establish a number that will decide the cutoff point for the impact relationship, equation 7 is developed.

$$\alpha = \frac{\sum_{i=1}^n \sum_{j=1}^n t_{ij}}{N} \quad (7)$$

Where N is the total number of matrix elements that will be formed by taking the average of the members of the matrix T in order to extract any effects that are considered to be insignificant. This suggests that the impact relationships won't include any effects that are less severe than the threshold value because there won't be any.

Step 6: Creating the relationship diagram for the cause and effect: The findings gained from the computations performed in the preceding steps will serve as the basis for the relationship diagram. Hence, the relationship between the cause and effect has been mapped to each of the coordinate sets comprising the entire number of rows and columns. These rows and columns illustrate the interactions among the criteria and provide information that can be used to determine which criteria are most significant and how the criteria interact.

4. Data analysis and presentation of the results

The analysis of the data and the presentation of the results for this current research focuses on two aspects, namely the analysis of the interview data and the analysis of the DEMATEL data.

4.1. Presentation of the interviews results

The qualitative interview analysis discussed in this context constitutes an integral component of the initial phase of DEMATEL analysis, which entails the process of “Obtaining Options.” Therefore, in this particular scenario, the code was provided for each criterion, and the analysis was subsequently extracted based on the themes that represented each criterion. In the first instance, strategic planning has two full-time personnel who are solely devoted to MI. This is the case in the first scenario. There was only one full-time worker who contributed to MI on a part-time basis at this point in time. Outwardly, they focus on macroeconomics such as inflation forecasting and demographic trends; however, internally, they look at industry-specific data such as the number of insurers in growth and the number of health insurance beneficiaries expected in a year, as well as the performance of competition based on information that is publicly available. As a consequence of this, MI analysts offer managers detailed “big pictures” of the environment of the sector in order to assist them in identifying market opportunities and risks. The commercial team focuses on in-house analysis when discussing pricing challenges and the pricing strategies employed by competitors. The operational level of the organisation documents the day-to-day actions that are carried out by the organisation. Data from operations are displayed in real time on digital dashboards that are located in the shared workspace. These processes are recorded, integrated, and coordinated utilising all of the IT technologies that are accessible; but, in order to maintain efficiency, we must refrain from doing them in a redundant manner throughout the many business divisions. Just four of the company’s information systems include a contact centre platform, an imaging tool that is utilised by technicians, Enterprise Resource Planning (ERP), and Customer Relationship Management (CRM). In point of fact, this technique made it significantly less difficult to operate a distributed business across the country by doing away with the prerequisite of expensive modifications and pointless operational costs. The business has developed a culture that is analytical and data-driven, and this culture supports strategic choices at every level through the use of a standardised architectural framework. This has a substantial positive impact on both the business plan and the company’s competitiveness.

In the second scenario, the DA unit is controlled by the operations department but maintains its primary interaction with the commercial sector. There are two analysts working in this unit full-time, and they report to the operations department. That is to say, the user data is the fundamental data asset of the organisation and the driving force behind making decisions at this level. This information is collected and analysed by the DA unit, which is responsible for the merchants’ consumers. In addition, this section caters to the demands of clients who on occasion request specialised market assessments, such as an investigation into the shopping habits of customers frequenting particular establishments. The DA section is responsible for initiatives that include more in-depth and broad market evaluations, such as an investigation into Black Friday’s purchasing patterns. In point of fact, the user data that was investigated belongs to the client, who has direct access to it. As a result, the individuals who were interviewed stated that they did not experience any difficulties in accessing data from the client’s platform. The most critical problems are those that include last-minute or unexpected requests, as stated by the unit manager and the analyst’s technical parts of the BI tools. According to the individuals who were questioned, the primary objective of this position is to provide strategic advice to the commercial team, with

a particular emphasis on short- and medium-term difficulties. The unit contributes to the launch of a new product or feature by estimating its sales and profitability and monitoring how well it does on the market; in the end, they help improve the relationship with customers. When a new product or feature is released, the unit assists with the launch. The unit not only contributes to the formulation of tactical strategies locally by providing information and recommendations to the senior managers of the commercial region, but it also focuses on the execution and monitoring of such strategies by providing feedback on the performance of the market.

In the third scenario, the data obtained from bank clients is the most valuable asset for the business intelligence (BI) section that is composed of three analysts that work with a substantial amount of data. The person who was interviewed stated that the activities and practises of the BI unit are increasing due to the fact that customers change their routines and expectations significantly more quickly than in the past. The Director who was questioned emphasised the importance of making effective use of information technology in order to operate their company more effectively. These reports are distributed to agencies on a monthly basis. In addition, they identify the various sorts of clients that they serve and keep track of the consumers that they lose to their competitors. This information is then provided to the Commercial Division to assist them in determining the most effective means by which to compete.

The findings from the interviews regarding knowledge sharing shed light on the manner in which employees engage in the exchange and dissemination of information within the organization, with a particular focus on competitive intelligence. The interviews offer valuable insights regarding the efficacy of communication channels and interdepartmental collaboration. Notably, a prevailing belief within the organization is that individuals possessing superior knowledge should consistently share their expertise. This observation also indicates that the prevailing culture of exchanging insights and knowledge regarding competitors yields significant competitive intelligence. One respondent also disclosed that:

... , “certain officers exhibit a strong inclination towards engaging in some discussions, particularly during routine meeting” ... ,

... , “some primarily focusing on information pertaining to weaknesses within the organization” ... ,

This suggests that the act of sharing knowledge can reveal areas of weakness and provide opportunities for improvement in one’s learning. Moreover, an additional respondent discloses that:

... , “In the majority of instances, there exists a deficiency in communication channels among workers, as individuals tend to prioritize their own tasks and activities” ... ,

This implies that the absence of effective communication channels between different departments can often be a prevalent issue in relation to “Competitive Intelligence”. The practice of compartmentalizing communication can impede the dissemination of information, hinder collaborative efforts, and adversely impact overall operational effectiveness. In instances where departments fail to establish effective communication channels, there is a risk of overlooking potential advantages associated with capitalizing on each other’s respective capabilities, exchanging valuable perspectives, or engaging in collaborative endeavors that could yield organizational-wide benefits.

A positive knowledge sharing (KS) score may suggest that employees are actively participating in the dissemination of pertinent competitive information, thereby contributing to a more comprehensive and knowledgeable competitive intelligence framework.

The findings from the interview regarding information technology indicate that there is an increase on the utilization of technological tools and systems for the purpose of collecting, analyzing, and overseeing competitive intelligence. This underscores the importance and necessity of such focus in the field of information technology. One interviewee also revealed that:

... , “a significant portion of our responsibilities revolve around utilizing online resources” ... ,

They revealed that during the COVID-19 pandemic, nearly all operations were conducted online, although they expressed some dissatisfaction with this arrangement. Nevertheless, another respondent revealed that:

... , “the online tools have improved their overall operations and good for competitive intelligence when it is utilized very well” ... ,

This suggest that the enhancement of competitive intelligence processes can be achieved through the effective utilization of an organization’s IT infrastructure, data collection methods, analytical capabilities, and automation. An increase performance in the field of information technology (IT) may suggest that the organization possesses advanced tools and platforms, which facilitate the efficient collection and analysis of data. This, in turn, can enhance the organization’s competitive intelligence endeavors.

Strategy formulation (SF) involves examining the impact of competitive intelligence on an organization’s strategic decision-making process, as revealed through interview results. One participant also revealed that:

... , “Strategy formulation plays a pivotal role in augmenting an organization’s overall operations” ... ,

It is evident that an organization demonstrates alignment between its objectives and competitive intelligence, as well as the ability to identify market opportunities and threats, conduct competitor analysis, and subsequently adjust its strategies.

This implies that the development of a clearly defined and efficient strategy offers guidance and intention, aligns endeavors, and empowers the organization to efficiently and effectively accomplish its objectives. There are multiple methods through which the process of strategy formulation contributes to the overall improvement of an organization’s operational effectiveness. An additional respondent expressed that:

... , “a carefully planned strategy offers in the office put us in good angle and objective for the organization” ... ,

The suggest that strategy formulation encompasses an organization’s mission and long-term objectives. This serves to provide employees with a clear sense of purpose and direction for competitive intelligence, thereby aligning their endeavors towards shared objectives. A greeter SF may indicate that the organization proficiently employs competitive intelligence to formulate informed strategies that leverage market opportunities and mitigate competitive risks.

The findings from the interviews regarding organizational culture pertain to the dominant values, norms, and behaviors that influence the utilization and incorporation of competitive intelligence within the organization. The interviews yield valuable insights into the organization’s prioritization of learning, collaboration, trust, and support for competitive intelligence endeavors. One respondent revealed that:

... , the office I work in plays a vital role in promoting adherence to ethical principles within the discipline" ... ,

This implies that the overall functioning of an organization can be favorable and conducive if the organizational culture fosters an environment in which employees are motivated and actively involved. Another respondent expressed that:

... , "my office environment is surrounded by an Islamic ethical culture raises principles of honesty, integrity, and accountability" ... ,

This implies that when employees possess a comprehensive comprehension of the significance of ethical behavior, they are more inclined to render judgments that are consistent with the values upheld by the organization, thereby diminishing the likelihood of engaging in unethical behaviors that have the potential to detrimentally impact the organization's reputation. A increase performance OC may suggest that the organizational culture promotes an atmosphere in which competitive intelligence is highly regarded, actively encouraged and widely embraced by employees at all hierarchical levels.

The focus of the interview results regarding competitors' information pertains to the methods employed by the organization in collecting, evaluating, and leveraging intelligence pertaining to its competitors. It is evident that the thoroughness and precision of competitor analysis, the origins of competitive information, and the organization's capacity to monitor and address competitor activities constitute a significant competitive advantage.

One respondent revealed that:

... , "we have designated personnel responsible for regularly updating information about our competitors, as we consider it a matter of great importance" ... ,

This implies that the inclusion of competitors' information can have a substantial impact on an organization's overall operational effectiveness. Acquiring knowledge regarding the strategies, strengths, weaknesses, and market positioning of competitors yields valuable intelligence that can inform decision-making, enhance operational procedures, and bolster competitiveness.

A high competitive intelligence (CI) may indicate that the organization has implemented a strong and effective competitive intelligence process, which enables them to gain a thorough comprehension of their competitors and the dynamics of the market. Another respondent expressed that:

... , "the aspects we prioritize in terms of competitiveness are what ultimately diminishes our rivals" ... ,

This implies that the act of monitoring the activities of competitors can aid in the identification of potential threats and risks that may affect the organization. Through the process of anticipating competitive actions, organizations have the ability to formulate contingency plans that effectively minimize the potential adverse effects on their operational activities.

5. Presentation of the results

The DEMATEL methodology was utilized to complete the task of conducting research into the primary factors that play a role in the efficiency of competitive intelligence. The first step in the process of obtaining the outcome of the analysis is to code the criteria and enter the data into an MS Excel sheet titled "Knowledge Sharing (KS)", "Information Technology (IT)", "Strategy Formulation (SF)", "Organizational Culture (OC)", and "Competitors" Information (CI)". After the process of gathering the data has been completed, this is the first step in the process of obtaining

the outcome of the analysis. Therefore, the opinions of the 12 experts who participated in this research and provided their responses on a Likert scale with integer scores of zero, one, two, three, and four are compiled and built into an initial individual matrix presented in an $n \times n$ non-negative direct relation matrix using equation 1. The average aggregate of the expert's decision matrices (Z), which is also referred to as the direct influence matrix, is calculated by using Equation 2, Table 1 present values that contains the outcomes of this calculation:

$$Z = \begin{bmatrix} 0.0000 & 3.7533 & 3.7533 & 3.8867 & 3.6200 \\ 3.4867 & 0.0000 & 3.7533 & 3.7533 & 3.8867 \\ 3.7533 & 3.5533 & 0.0000 & 3.5533 & 3.8200 \\ 3.0512 & 3.6867 & 3.7533 & 0.0000 & 3.8867 \\ 3.4200 & 3.8867 & 3.8867 & 3.6867 & 0.0000 \end{bmatrix}$$

Following that, the direct influence matrix was normalized by utilising equation 3, and the result is the normalized matrix D displayed below:

$$D = \begin{bmatrix} 0.0000 & 0.2467 & 0.2467 & 0.2555 & 0.2379 \\ 0.2292 & 0.0000 & 0.2467 & 0.2467 & 0.2555 \\ 0.2467 & 0.2336 & 0.0000 & 0.2336 & 0.2511 \\ 0.2006 & 0.2423 & 0.2467 & 0.0000 & 0.2555 \\ 0.2248 & 0.2555 & 0.2555 & 0.2423 & 0.0000 \end{bmatrix}$$

The expert's response is used to get the normalised initial direct-relation matrix, and equation 4 is used to determine the total relation matrix, which refers to the total influence generated by the expert's response.

$$T = \begin{bmatrix} 6.1162 & 6.7308 & 6.8264 & 6.7323 & 6.8469 \\ 6.2593 & 6.4866 & 6.7794 & 6.6801 & 6.8110 \\ 6.2073 & 6.6081 & 6.5126 & 6.6039 & 6.7388 \\ 6.0739 & 6.5036 & 6.5989 & 6.3042 & 6.6298 \\ 6.2566 & 6.6900 & 6.7850 & 6.6772 & 6.6075 \end{bmatrix}$$

By computing the sums of the rows and columns of the matrix that generates the total relation matrix, also known as the rows matrix vectors and columns matrix vectors of the total relation matrix, one can establish the causes and effects based on the study. The solution of equations 5 and 6 yields these outcomes. In other words, "cause" and "effect" can be determined if the vectors r and c represent the sum of the rows and the sum of the columns of the entire relation matrix. This enables the identification of "cause" and "effect." As a result, the result of the computation is displayed in the matrix positioned above. The relationship between the cause and effect, as indicated in section 4, step 4, is determined during the final review.

From this, only SF was found to belong to the cause group (see Table 1), which indicated that it had an influence on the other criteria. On the other hand, the remaining criteria were found to belong to the effect group, which indicated that they were affected by the other criteria. The following step, which is required in order to construct an interaction diagram, is to select a threshold values, which is denoted by a value (θ), from the entirety of the relation matrix. This

Table 1. Direct influenced of the criteria among themselves

Criteria	r_i	c_i	$r_i + c_i$	$r_i - c_i$	identity
SF	33.2525	30.9133	64.1658	2.3392	cause
IT	33.0164	33.0190	66.0354	-0.0026	effect
OC	32.6706	33.5023	66.1729	-0.8317	effect
KS	32.1104	32.9977	65.1081	-0.8872	effect
CI	33.0163	33.6339	66.6503	-0.6176	effect

Table 2. The values that determine the relationships impact

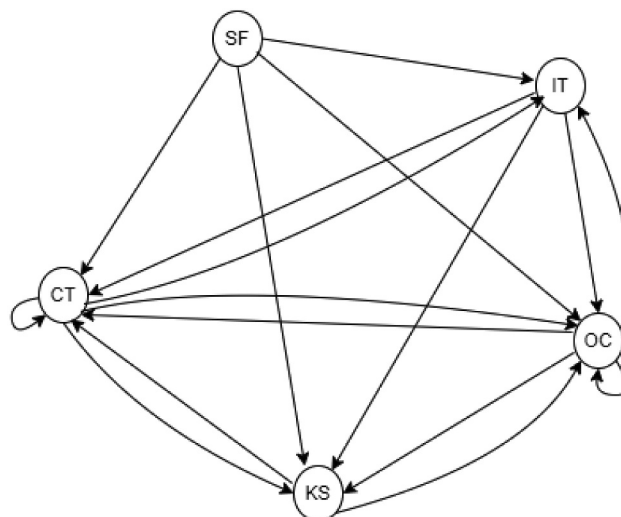
	SF	IT	OC	KS	CT
SF	6.1162	6.7308	6.8264	6.7323	6.8469
IT	6.2593	6.4866	6.7794	6.6801	6.8110
OC	6.2073	6.6081	6.5126	6.6039	6.7388
KS	6.0739	6.5036	6.5989	6.3042	6.6298
CI	6.2566	6.6900	6.7850	6.6772	6.6075

step must be completed before moving on to the next phase. As a result, equation 7 is utilised so that the value of the threshold may be determined. Because of this, the calculated threshold value comes out to be 6.56265046, which indicates that any value in the total relation matrix that is greater than the threshold value has an effect on the relationships diagram. This is because any value in the total relation matrix that is less than the threshold value does not have an effect on the relationships diagram. As a result of this, the values that are being questioned have been highlighted in bold inside the matrix that can be located in Table 2:

An arrow is drawn from the first criterion in each row to the other criteria in the direction in which their values are greater than the threshold value in order to illustrate how the influence can connect the criteria in Table 2. This is done to highlight how the impact binds the characteristic together, which is the objective of this. As a consequence of this, the diagrams that were produced as a result of this analysis are presented in Figure 1.

According to the results of the DEMATEL investigation, the “Strategy Formulation” is the most important factor that determines how effective CI is. The results of the investigation led to the formation of this conclusion. On the other hand, the consequences of something called “Strategy Formulation” can be observed in terms of all of the other variables. According to the findings of this investigation, each of the criteria exerts some level of effect over one or more additional criteria, as well as any of the other features that are connected to this subject in any manner. This leads one to suppose that the effect relationship drawn is what determines the components that are regarded to have a connection with the specific CI implementation. In addition to this, it is of the utmost importance to have a clear and unmistakable understanding of how important it is to measure the effectiveness of CI. As a consequence of this, the result of this section of the analysis is connected to the opinions of the expert’s views that were obtained from the interview findings.

Figure 1. The Interrelationship Diagram.



5. Discussion

Using the opinions of industry professionals, this study investigates whether or not CI is beneficial. As a consequence of the in-depth research that was carried out, the purpose of this project is to identify CI practices of organisations that may have been apparent as a result of the research. The results of the empirical research that was carried out led to a number of exciting discoveries, and the cross-case analysis uncovered further data that lends credence to our idea.

According to the findings of the current study, there are a number of management styles that are associated with CI. These styles are represented by the individuals who are in charge of the organisation. These are the fundamental elements, and the implementation of CI depends on the interrelationships that exist between them in order to be successful and efficient. This study has shown that CI units appear to place a greater emphasis on customer value analysis, concentrating on the needs of their own customers in specific markets and segments, rather than conducting an investigation into the larger and more long-term “picture.” This was revealed by the fact that CI units appear to place a greater emphasis on the customer value analysis. This is connected to the discovery that indicates that “Strategy Formulation” has an impact on all of the dimensions that ensure CI effectiveness.

In spite of the significance of CI in an environment that is both dynamic and turbulent, this is the situation as it currently stands. The research also comes to the conclusion that business units may still be served by the normal tasks that are carried out by the CI unit, but the impact of this rests with “Strategy Formulation.” That is, if the formulation of the strategy linked with the application of CI is going to be effective, an organisation will be able to put forth their clear aim based on the strategy. This is due to the fact that, in each instance of putting CI into practise, it was revealed that there were no standard processes, procedures, or strategies in place. In the process of implementing CI, particularly in regard to data collection, consumers continue to be the most important source of information; however, an increasing amount of information is obtained online. Right from the planning phase, which includes both one-off endeavours and ongoing routines and activities, in the process of implementing CI, consumers remain the most important source of information.

The research also establishes that it’s feasible that the recent trend of applying CI might be ascribed to the expansion of open social platforms. This is something that the researchers found to be a possibility. Emails, presentations, face-to-face meetings, and written reports are all methods that are utilised in order to disseminate information on the efficacy of CI in addition to the quality and reliability of the data. Because of this, it can be deduced from the results of this research that the “Information Technology” criterion has an effect on all of the other criteria, with the exception of the “Strategy Formulation” criterion. This is the reason why “Information Technology” is being investigated; despite having varying degrees of complexity and only a few people working on them, substantial actions that are involved in the “intelligent cycle” require the application of information technology. Despite these facts, “Information Technology” is being investigated. Furthermore, With the exception of the “Strategy Formulation” criterion, it is evident that the “Organisational Culture” criterion, the “Competitors Information” criterion, and the “Strategy Formulation” criterion are interrelated and impact one another.

The most important findings from this research are also associated with the ease at which the IT infrastructure is required. This requirement is essential to the capability of all businesses to acquire, analyse, and distribute the CI process. The findings indicate that CI is becoming an increasingly essential factor for basing judgements on facts (Vassakis et al., 2017). In recent years, there has been a rise in interest in data analytics, which suggests that an increasing number of companies are employing analytics to drive decision-making in order to gain a better understanding of their companies, markets, and customers. This is being driven by the desire to gain a better understanding of their companies, markets, and customers (Jarrahi, 2018).

This study has compared its findings to those of earlier similar studies. Bulley et al. (2014) conducted a study which revealed that organisations possess an understanding of the significance and function of competitive intelligence (CI); however, they have not yet maximised its potential.

One significant discovery is that a comprehensive and unified process for CI is not being implemented; instead, a collection of impromptu measures are being utilised. This statement suggests the necessity of establishing structured methodologies for producing competitive intelligence data and optimising the techniques employed in evaluating said data. Upon comparing this discovery with the current investigation, it can be inferred that the study solely identifies the fundamental criteria that would prompt corporations to embrace CI, without delving further into the matter.

According to Tahmasebifard's research (4), there is a positive correlation between competitive intelligence (CI) and market performance. The various subtypes of competitive intelligence (CI) have varying degrees of impact, with competitor intelligence, market intelligence, and technological intelligence having the most significant effects in that order. Therefore, it is of paramount importance to consider the impact of the study type that is associated with the research we conducted. There exists a disparity in the criteria employed by us and those utilised by Tahmasebifard (Tahmasebifard & Wright, 2018). Moreover, the present study aims to identify the primary criteria among the investigated proposed criteria.

According to Olszak's research (Olszak, 2014), there is valuable insight regarding the utilisation of various information tools and technologies for the purpose of constructing competitive intelligence. Thus, in contrast to the present investigation, it can be inferred that the primary criteria elucidated by this study provide insight regarding the implementation of the CI.

The study conducted by Cavallo et al. (2021) has served as the foundational basis for the present investigation. The current study has adopted the criteria utilised by Cavallo et al. (2021), but has also extended beyond their work by emphasising the significant criteria that have an impact on the CI.

Asghari et al. (2019) employed comparable criteria to the present study in examining the influence of four criteria on CI. The findings of their research indicate that the information regarding competitors had a notable impact on competitive intelligence (CI). Furthermore, the results that were acquired suggest that Information Technology (IT) has a noteworthy and favourable impact on Competitive Intelligence (CI). The impact of the organisational culture on continuous improvement (CI) was found to be both statistically significant and positive. Therefore, they were unable to definitively determine which criterion held the greatest significance among the set. This is precisely what the present study has undertaken.

The following recommendations are provided to the organization in order to improve its competitive intelligence practices, taking into account the strengths and weaknesses that have been identified.

- In order to optimize competitive intelligence practices, the organization can leverage its identified strengths and weaknesses. This can be achieved by establishing specialized teams that harness the expertise of employees or departments that demonstrate exceptional proficiency in the collection and analysis of competitive intelligence. Establish dedicated teams that specialize in conducting research and analysis for the purpose of competitive intelligence. Likewise, organizations have the opportunity to enhance their competitive intelligence capabilities through strategic investments in advanced tools, software, and technology. These resources enable efficient data collection, analysis, and monitoring of competitors, thereby strengthening the organization's overall competitive advantage. Organizations have the ability to implement a practice known as "Incentivize Information Sharing," wherein they actively encourage employees to share their findings on competitive intelligence and provide rewards for contributions that result in valuable insights.
- To mitigate organizational weaknesses, companies can implement training and skill development initiatives aimed at identifying areas where employees may lack the requisite skills for effectively practicing competitive intelligence. Offering training programs or workshops aimed at enhancing individuals' analytical and research proficiencies. Organizations have the ability to optimize their operations in order to effectively address any inefficiencies or bottlenecks that may arise during the process of gathering competitive intelligence. Optimize operational processes and facilitate the timely dissemination of pertinent information to key stakeholders. Moreover, it is imperative to possess Ethical and Legal Awareness in

order to effectively tackle any ethical or legal issues pertaining to competitive intelligence practices. It is imperative to establish comprehensive protocols and educational programs that effectively outline the principles and practices pertaining to the ethical collection and utilization of data.

6. Conclusion

This study, which focuses on CI's function in corporate strategy, looked into the factors influencing the success of CI's implementation from a variety of angles. The principles of agile management rely on this, hence it's vitally important. Academics and business leaders would take notice of the correlation between CI and efficient management as a result of the research contributions associated with this conclusion. Both the company's overall strategy and its corporate brand are found to be important in the study's findings. The findings also show that in a fully digital and networked business world, CI strategies are more vital than ever. The study concludes that this idea is a major advancement because the existing literature fails to account for the most recent developments in the broader field of competition. In addition, the findings of this study corroborate and reinforce those of other studies which concluded that the CI process referred to as the "intelligence cycle" has not undergone any major changes. It is also possible to observe the interplay between individual and organisational context variables. The research demonstrated good management as an example of how top managers develop a dedicated CI function and define its job, practices, and the dedicated personnel while doing so, illustrating how our findings and framework may be applied in practise. There are several problems with this study that need fixing. There is an issue with the research due to the small sample size and the inherent average observer bias. These questions highlight the need for follow-up studies that employ different theoretical frameworks or statistical methods in an effort to replicate the findings of the present study. Researchers and practitioners alike can benefit from this study despite its caveats.

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