POTENTIAL CRITICAL FACTORS INFLUENCING THE MATURITY OF BUSINESS ANALYTICS IN SRI LANKA – A SYSTEMATIC LITERATURE REVIEW

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Abstract

In the rapidly evolving, data-driven business landscape, organizations leverage vast amounts of data from various sources to enhance efficiency, decision-making, and financial performance. Business Analytics (BA), defined as the use of data, IT, statistical analysis, quantitative methods, and computer-based models, plays a crucial role in this context. The maturity of business analytics, which measures an organization's analytics competency, is pivotal for making informed, data-driven decisions. This systematic literature review investigates the potential critical factors influencing business analytics maturity in Sri Lanka's apparel and software industries. This review utilized the PRISMA framework to identify and screen relevant literature, resulting in the selection of 43 papers that met the inclusion criteria, focusing on business analytics maturity and its influencing factors, using the Technology-Organization-Environment (TOE) framework. The review identifies and categorizes key factors such as compatibility, data management, data infrastructure, technology-supporting infrastructure, trust-in-technology, top management support, organizational culture, organizational readiness, and environmental factors including regulations and competition pressure as the potential factors that could affect the BA maturity of Sri Lankan apparel and software industry. The analysis reveals that top management support, organizational culture, data management, and robust technology infrastructure are the most significant determinants of BA maturity. The findings suggest that while these factors are widely recognized in broader contexts, their applicability and impact within Sri Lanka's unique business environment require empirical validation. Consequently, this review highlights the necessity for future research to test these factors specifically in Sri Lanka's software and apparel industries.

Keywords: Apparel Industry, Business Analytics, Software Industry, TOE framework

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Introduction

In today's data-driven and dynamic business environment, organizations are dealing with vast amounts of data and information generated from many sources including operational processes, customer interactions, transactions, and social media. According to research done by MicroStrategy, 64% of companies worldwide use data to improve their efficiency and productivity, 56% use it to improve the effectiveness of decision-making, while 51% of companies use data to improve financial performance (Gavin,2019). Hence, this vast amount of data has the potential to provide organizations with valuable insights that can drive strategic decisions, optimize operations, and gain a competitive edge in the market. This is where Business Analytics comes into play.

According to prominent researchers in the field, Business Analytics is defined as "the use of data, information technology, statistical analysis, quantitative methods, and mathematical or computer-based models to help managers gain improved insights about their operations and make better fact-based decisions" (Davenport & Harris,2007, as cited in Dahlgren et al., 2019). Defined by the Gartner Group, four main types of business analytics can be identified as descriptive, diagnostic, predictive, and Predictive (Silva et al., 2021). Descriptive Analytics analyses what happened in the past. It involves using historical data to provide visualizations, reports, and dashboards. Diagnostic analytics examines "Why did it happen?". Diagnostic analytics takes another step forward to identify the reason for analytics identified. Predictive analytics forecasts what will happen in the future instead of simply identifying existing data. Prescriptive analytics is the most advanced since it provides actionable insights on "How can we make it happen?" (Silva et al., 2021).

Analytics maturity is crucial for organizations since, when organizations develop through maturity levels their data collection proficiency and interpretation capabilities improve resulting in more accurate predictions and decisions. Hence, analytics maturity improves a data-driven culture where decisions are made on proof rather than on the senses. According to McKinsey, companies with high levels of analytical maturity see growth in their earnings before interest, taxes, depreciation, and amortization (EBITDA) of 15% to 25% (Sweenor, 2022).

There are many models for the maturity of Business Analytics that show the pathway for organizations to achieve a higher level of BA maturity. To identify which model to adopt, it is important for organizations to identify what are the factors that can affect the maturity of BA. A factor is any significant characteristic where the Business Analytics are conducted in an organization. (Potancok & Pour, 2021). These factors may include any Internal or external factors such as Analytical Capabilities, Technology and Tools, Organizational Culture, industry trends and regulations, Economic Conditions, and many other factors. Out of all these factors, several factors can critically affect the maturity of Business Analytics of an organization. Recognizing these critical factors and understanding their influence on BA maturity is crucial since it guides organizations to allocate resources effectively, prioritize their investments, and develop strategies to advance their analytics maturity. Ultimately, recognizing these factors can lead organizations to make better data-driven decisions and achieve competitive advantage in the industry.

The objective of this literature review is to identify and analyze the factors that authors of existing literature have recognized as influencing the maturity of Business Analytics (BA). These identified factors are then considered as potential influences on the maturity of BA specifically within the software and apparel industries in Sri Lanka. This objective is formulated due to the noticeable lack of literature available on the Sri Lankan context, highlighting the need to understand and apply these factors to local industries for enhanced analytics maturity. The software and apparel industries in Sri Lanka have been

strategically chosen for this study due to their significant contributions to the national economy and their distinct characteristics.

Sri Lankan apparel and textile manufacturing industries are significant contributors to the country's economy. Throughout the years Sri Lankan apparel industry has gained a strong reputation worldwide. According to the Sri Lanka Export Development Board (EDB), Sri Lanka's top three apparel companies are ranked among the world's 50 most significant suppliers, and the industry's total export earnings in 2018 came in just short of US $5 billion, the peak figure. (Apparel & Textile,2023). In 2022 EDB declared that Sri Lanka's export revenue from apparel and textiles increased by 12.14% year over year to $494,82 million with the growth of the export of woven fabrics (31.04%) and apparel (11.87%). (Sri Lanka's Export Performance,2022).

Sri Lanka's software industry has been evolving over the past years. Similar to the apparel industry in Sri Lanka, the software industry also plays a major role in export market. Sri Lankan ICT companies export their software products to many countries such as North America, Australia, the Middle East, Africa, the EU, East Asia, and the Nordic region. (SL software industry, 2024). Industry reports indicate that Sri Lanka's software industry has established itself as a top player in the global market experiencing significant growth. In terms of market size and growth of the software industry in Sri Lanka, it was valued in the market at around 102 billion in 2020, and between 2021 and 2026 a compound annual growth rate of 12% was predicted (Wetechies, 2023).

If Sri Lanka focuses on leveling up the BA maturity in the software and apparel industries, it has the potential to increase innovation and competitiveness in these sectors, ultimately elevating the country's economy to a higher position in the global market. Therefore, this systematic literature review aims to identify the potential critical factors that could affect the maturity of Business Analytics specifically in Sri Lanka's software and apparel industries, as these industries are key drivers for economic growth and global competitiveness.

Methodology

This systematic review of the literature was conducted based on existing literature on Business Analytics. As the first step, to guide the systematic literature review a question was formulated. (Jones & Evans, 2000). The review question that guided the literature search in this study is: "What are the potential critical factors that influence the maturity of Business Analytics of software and apparel industries in Sri Lanka?"

After identifying the review question, the PRISMA framework was used to identify and screen papers.(Page et al., 2021). Research papers were obtained from several databases such as Google Scholar, Research Gate, and IEEE Xplore Digital library using the keywords and logics "Business Analytics", "Business Analytics Maturity", "Business Analytics" AND "Factors", "Business Analytics maturity" AND "Factors", "Business Intelligence" AND "Factors", Business Analytics maturity" AND "Factors" AND "Sri Lanka", "Business Analytics" AND "Sri Lanka" AND "Apparel" OR "Software industry". Papers published in the English language from 2010 to 2024 time period were considered for this review.

The inclusion criteria for this review encompass literature that discusses Business Analytics maturity, factors affecting Business Analytics maturity, factors affecting Business Intelligence, and factors that influence any area that is related to BA. Additionally, the review includes literature focused on Business Analytics in the apparel industry in Sri Lanka and the software industry in Sri Lanka. The exclusion

criteria filter out literature that does not contribute to the purpose of this review, duplicated literature, and literature that is not conducted in English.

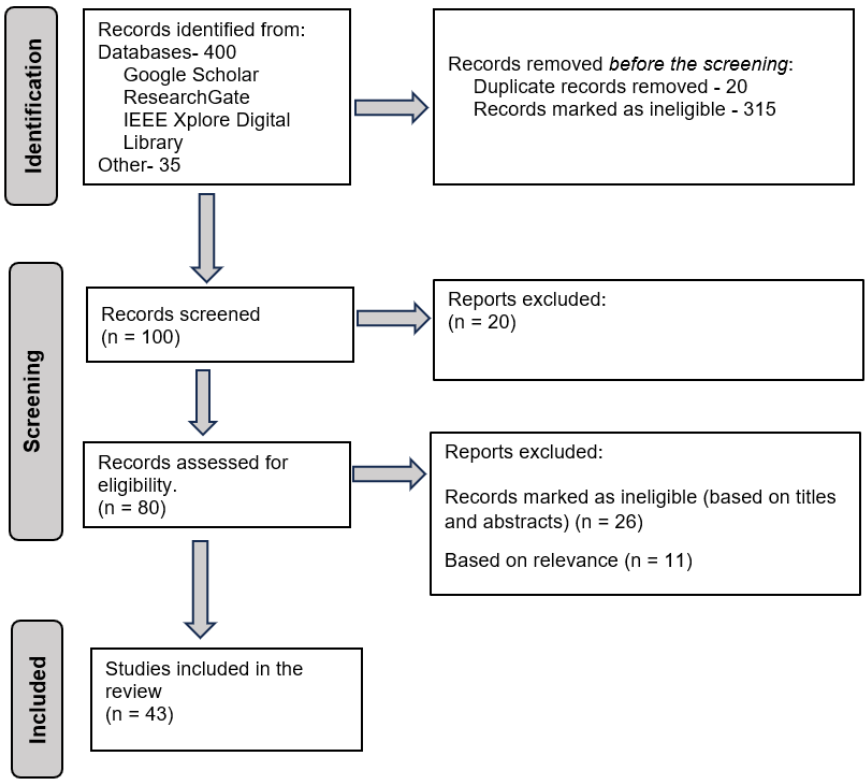

Fig. 1. Approach To Selecting Related Studies

After the identification and screening process, 43 papers were selected to include in the review. The identification process done using the PRISMA method is shown as a flow diagram in Fig.1

Systematic Literature review

This section provides a systematic review of existing literature on the maturity of Business Analytics. The review focuses on understanding the key factors influencing BA maturity. By examining technological, organizational, and environmental dimensions, this review aims to identify the critical elements that contribute to the effective adoption and advancement of BA within organizations.

Business Analytics

Business analytics involves the systematic process of gathering, analyzing, and interpreting an organization's data to uncover patterns, trends, and insights that support more informed and strategic decision-making. The increasing use of information technology in the business world has resulted in the creation of large and complex datasets for various organizational functions(Bayrak, 2015). Understanding their businesses and making decisions based on these large datasets has become a significant challenge for organizations (Bayrak, 2015).

The term "Business Analytics" describes the application of statistical, machine learning, and data mining models and methods to business data to derive insights that can inform and guide business decisions (Delen & Ram, 2018). Such integrated applications help decision-makers, including managers and executives, understand and make sense of business data (Raghupathi & Raghupathi, 2021). Companies that effectively use analytics have been relatively more successful and have gained a competitive advantage compared to those that do not utilize analytics.(Ariyarathna & Peter, 2019).

Hence, the strategic implementation of business analytics is crucial for sustaining competitive advantage and driving organizational success.

Maturity of Business Analytics

Analytics maturity is a measurement of the analytics competency level of an organization. The use of analytics is not a one-off exercise but rather a continuous process, with various factors becoming prominent depending on the organization's level of maturity (Ariyarathna & Peter, 2019). An organization does not reach a higher level of maturity in Business Analytics simply by adopting analytical tools, techniques, and methods. Generally, the notion of "maturity" is very broad and means "fully developed", or "perfected." Organizations reach analytics maturity through evolution, which includes integration, management, and use of various data sources at key decision-making points (Król & Zdonek, 2020).

Both academics and practitioners have studied the maturity of BA and developed numerous Business Analytics maturity models. These models provide a comprehensive roadmap to achieve maturity in the use of BA within organizations. They specify the main factors that need to be addressed when moving up the maturity scale and outline how organizations should acquire the necessary capabilities. This roadmap helps organizations understand the critical aspects of their analytics journey, ensuring that they systematically develop and enhance their analytical competencies over time (Ariyarathna & Peter, 2019).

Factors Affecting the Maturity of Business Analytics

To reach a higher level of BA maturity it is important for organizations to identify what influences their BA maturity. By studying the present literature, the factors influencing Business Analytics' maturity were identified and categorized according to the Technology Organization and Environment (TOE) framework. The reason for using the TOE framework is that it is one of the most comprehensive frameworks that can explain technology adoption in businesses. Furthermore, the TOE framework considers the organization as a whole, rather than only focusing on how each member of the organization uses and accepts new technologies (Bany Mohammad et al., 2022).

The identified factors with mentioned references are shown in the tables Table 1, Table 2, and Table 3.

Technological Dimension

Technological factors play a vital role in shaping the maturity of Business Analytics within organizations. This sector includes factors such as compatibility, data management, and technological infrastructure, all of which influence how effectively an organization can implement and leverage analytics tools. Addressing these factors is crucial for building a strong foundation for advancing BA capabilities and achieving greater maturity in analytics processes. Through an extensive review of existing literature, key technological factors have been identified and are presented in Table 1.

Table 2. Technological Factors

Factor	Reference
Compatibility	(Alkhalil, 2020) , (Madhlangobe, 2019), (Kumar & Krishnamoorthy, 2020), (Horani et al., 2023), (Stjepić et al., 2021), (Alanudin et al., 2024), (Cruz-Jesus et al., 2018)
Data Management	(Soni et al., 2023a), (Nam et al., 2019), (Bany Mohammad et al., 2022), (Bolonne & Wijewardene, 2020a), (Horani et al., 2023), (Lautenbach et al., 2017)

Data infrastructure	(Nam et al., 2019), (Bany Mohammad et al., 2022), (Bolonne & Wijewardene, 2020a), (Saravanabhavan et al., 2023), (Lautenbach et al., 2017)
Technology Supporting Infrastructure	(Nam et al., 2019), (Bany Mohammad et al., 2022), (Horani et al., 2023), (Saravanabhavan et al., 2023), (M.Potancok, J.Pour, 2021), (Adzandeh et al., 2024)
Trust-in-Technology	(Madhlangobe, 2019)
Technology Assets	(Kumar & Krishnamoorthy, 2020), (Alanudin et al., 2024)
Technology Competence	(Horani et al., 2023)

Compatibility

Compatibility plays a significant role in how organizations adopt and mature their Business Analytics. It refers to how well BA fits with an organization's existing systems, values, experiences, and needs (Horani et al., 2023). When BA aligns well with these elements, it can be integrated more smoothly without major disruptions. Challenges such as managing large and varied datasets and integrating new systems with existing ones can hinder the adoption of big data analytics (Alkhalil, 2020). Studies highlight that when technology matches an organization's values and needs, it is more likely to be adopted successfully (Kumar & Krishnamoorthy, 2020). Thus, ensuring compatibility is essential for the effective implementation and growth of BA.

Data Management

Data management involves the processes and technologies used to collect, store, and retrieve data for analysis. It includes ensuring good storage architecture, data quality, consistency, accessibility, and data security and privacy (Soni et al., 2023). Effective data management is critical for successful BA implementation, as poor data quality can lead to flawed systems and errors, reducing the reliability of analytics (Nam et al., 2019). Organizations need to maintain high data quality by enforcing standards, preventing errors, and ensuring data is reliable, current, relevant, and accurate (Bany Mohammad et al., 2022; Horani et al., 2023).

Data Infrastructure

Strong data infrastructure is essential for the extensive use of Business Intelligence and Analytics (BI&A). Organizations with robust data infrastructure are better equipped to use BI&A effectively (Lautenbach et al., 2017). Data infrastructure readiness involves the ability to handle Big Data analytics and integrate necessary underlying data (Bolonne & Wijewardene, 2020). The capability of data infrastructure significantly influences the extent of BA usage, driving innovation and enhancing organizational performance (Bany Mohammad et al., 2022). Investing in scalable and integrated data infrastructure enables organizations to leverage BA for decision-making and strategic planning.

Technology Supporting Infrastructure

A well-developed IT infrastructure is crucial for initiating and adopting business analytics smoothly. It acts as the technical foundation for an organization's readiness for new innovations. The availability and compatibility of IT infrastructure allow companies to share real-time information, analyze customer data, develop products, and understand competitive markets through a compliant and interconnected system (Nam et al., 2019; Bany Mohammad et al., 2022). The lack of necessary internal IT infrastructure can be a major barrier to adopting new technologies, highlighting the need for robust and scalable IT foundations to enhance BA adoption and growth.

Trust-in-Technology

Trust in the reliability, security, and accuracy of technology builds confidence among users, encouraging broader adoption and integration into business processes. Studies state that Trust-in-Technology is important in influencing the intent to use Big Data analytics within organizations, especially after initial adoption (Madhlangobe, 2019). Building this trust involves ensuring strong security measures, maintaining high data quality, and demonstrating the tangible benefits of BA through successful examples and results.

Technology Competence

Technology competence refers to the ability of an organization's members to adopt, integrate, and use BA in their operations. This includes having the necessary knowledge and skills to effectively use technology (Horani et al., 2023). Enhancing technological competence through training and development is essential for maximizing the benefits of BA. Organizations with high technology competence can better utilize analytics tools, derive meaningful insights, and drive strategic decision-making, advancing their BA maturity.

Organizational Dimension

The organizational dimension focuses on the internal characteristics and dynamics that impact the maturity of Business Analytics within a company. This includes factors like organizational culture, structure, top management support, and talent management. These elements determine how well an organization can integrate analytics into its decision-making processes and sustain its growth over time. The critical organizational factors identified from past literature are summarized in Table 2.

Table 3. Organizational Factors

Factor	**Reference**
Vision and Strategy	(Bolonne & Wijewardene, 2020a)
Organization Readiness	(Alkhalil, 2020), (Horani et al., 2023), (Stjepić et al., 2021)
Top Management Support	(Alkhalil, 2020), (Nam et al., 2019), (Bany Mohammad et al., 2022), (Kumar & Krishnamoorthy, 2020), (Horani et al., 2023), (Stjepić et al., 2021), (Lautenbach et al., 2017), (Sparks & McCann, 2015), (Adzandeh et al., 2024), (Abrew & Wickramarachchi, 2021), (Alanudin et al., 2024), (Cruz-Jesus et al., 2018)
Organizational Culture	(Soni et al., 2023a), (Horani et al., 2023), (Saravanabhavan et al., 2023), (M.Potancok, J.Pour, 2021), (Sparks & McCann, 2015), (Abrew & Wickramarachchi, 2021), (Rajapaksha et al., 2022)
Organization Structure	(Nam et al., 2019), (Bolonne & Wijewardene, 2020a), (Horani et al., 2023), (Abrew & Wickramarachchi, 2021)
Presence-of-Champion	(Bany Mohammad et al., 2022), (Horani et al., 2023)
Talent-Management Challenges	(Bany Mohammad et al., 2022), (Bolonne & Wijewardene, 2020a), (Lautenbach et al., 2017), (Adzandeh et al., 2024)

Vision and Strategy

A clear vision and strategy are essential for successful BA implementation. For an instant, initiatives related to Big Data analytics should stem from specific business needs and be guided by a strategic business vision. Without this alignment, big data analytics systems risk failure as they might not address actual business problems, leading to ineffective results (Bolonne & Wijewardene, 2020). Therefore, having a well-defined business problem to address with BA is crucial for generating positive outcomes.

Organizational Readiness

Organizational readiness for adopting BA involves a shift towards a data-driven decision-making culture and establishing proper data governance and accessibility policies (Alkhalil, 2020). This readiness includes the organization's willingness to adopt and effectively use BA, which depends on factors like financial resources, IT infrastructure, and skilled personnel (Horani et al., 2023). Studies have shown that organizational readiness positively impacts the adoption of Business Intelligence systems in small and medium-sized enterprises (SMEs) (Stjepić et al., 2021).

Top Management Support

Support from top management is critical for the successful adoption and implementation of BA. Top management ensures competitiveness, informed decision-making, process monitoring, timely key performance indicators (KPIs), and reliable information (Alkhalil, 2020). The initiation and support for new technology adoption often come from senior management, and their backing is essential for overcoming organizational resistance to change (Nam et al., 2019). Strong top management support is widely recognized as a determinant of successful BA adoption (Kumar & Krishnamoorthy, 2020; Bany Mohammad et al., 2022; Horani et al., 2023; Stjepić et al., 2021).

Organizational Culture

Organizational culture significantly affects how analytics are used and integrated within a company. It encompasses the organization’s approach to using analytics, the advancement and spread of analytics practices, and the support provided by business strategies, leadership, capabilities, and investments (Soni et al., 2023). A culture that promotes the use of data and advanced analytical techniques enhances the effectiveness of BA (Horani et al., 2023). Research shows a significant impact of organizational culture on the utilization of business analytics (Rajapaksha et al., 2022).

Organizational Structure

The organizational structure for decision-making can be centralized or decentralized. A centralized structure features a clear hierarchy of authority, while a decentralized structure allows for more creativity and collaboration (Horani et al., 2023). In centralized analytics environments, one or a few teams handle analytics, whereas, in decentralized environments, each business function or department employs BA separately, facilitating quicker adoption and benefit realization (Nam et al., 2019). A well-organized structure, including cross-organizational collaboration and dedicated analytics departments, supports the adoption of big data (Bolonne & Wijewardene, 2020).

Presence of a Champion

Having a champion within the organization, someone highly enthusiastic and knowledgeable about both the business processes and technological innovation is crucial for successful BA adoption. Champions drive innovation by providing information, creating awareness, securing resources, and gaining organizational acceptance (Bany Mohammad et al., 2022; Horani et al., 2023).

Talent-Management Challenges

Executing BA effectively requires a mix of business and IT expertise. Experts with the necessary skills, especially in logical reasoning and data analysis, are vital for utilizing the full potential of BA tools and technologies (Bany Mohammad et al., 2022). Therefore, having talented individuals in both business and technology roles is a key to successful BA adoption and utilization.

Environmental Dimension

The environmental dimension encompasses external factors that influence the maturity of Business Analytics within organizations. These factors include regulatory requirements, government support, competitive pressure, and market influences, all of which can either facilitate or hinder the adoption and advancement of BA. Key environmental factors identified from the literature are outlined in Table 3.

Table 4. Environmental Factors

Factor	**Reference**
Regulations	(Alkhalil, 2020), (Bany Mohammad et al., 2022), (Horani et al., 2023), (Lautenbach et al., 2017)
Government support	(Nam et al., 2019)**,** (Horani et al., 2023)
Competition Pressure	(Nam et al., 2019)**,** (Bany Mohammad et al., 2022)**,** (Kumar & Krishnamoorthy, 2020)**,** (Horani et al., 2023)**,** (Stjepić et al., 2021)**,** (Alanudin et al., 2024)**,** (Cruz-Jesus et al., 2018)
External Market Influence	(Bany Mohammad et al., 2022)**,** (Bolonne & Wijewardene, 2020a)**,** (Lautenbach et al., 2017)
Industry Type	(Alanudin et al., 2024)

Regulations

Government regulations and policies play a crucial role in the adoption of technology, including business analytics (BA). These regulations can include incentives, technological standards, or legislation, which can either encourage or hinder technology adoption (Horani et al., 2023). Legal implications, data ownership issues, and service level agreements (SLAs) are common concerns that can negatively impact the adoption of BA (Alkhalil, 2020). For example, the banking sector is highly regulated, requiring stringent compliance with laws and regulations to ensure accurate data collection and analysis (Bany Mohammad et al., 2022).

Government Support

Government support is a significant factor in influencing the diffusion of innovation. Governments can impact the adoption of BA by implementing policies that increase or decrease incentives, such as tax adjustments or providing a favorable regulatory environment. Additionally, governments can fund research and development in big data, offer training for human resources, and update legal frameworks to protect personal information and intellectual property rights (Nam et al., 2019). These actions can stimulate the adoption of BA in the private sector by creating a supportive environment.

Competition Pressure

The intensity of competition within an industry can drive organizations to adopt BA to maintain or improve their competitive edge. Organizations facing pressure from competitors using BA technologies are more likely to adopt these technologies themselves to avoid falling behind (Nam et al., 2019). Studies have shown that competitive pressure significantly influences the extent to which organizations use business intelligence and analytics (Bany Mohammad et al., 2022; Kumar & Krishnamoorthy, 2020). Early adopters of technology often gain a first-mover advantage in their industry (Horani et al., 2023).

External Market Influence

External market influences, such as competitive pressures and environmental uncertainties, play a significant role in driving the adoption of BA. Organizations must engage in strategic initiatives, like Big Data analytics, to understand both internal and external environments better (Bolonne & Wijewardene, 2020). The level of external market influence has been shown to have a statistically significant effect on the extent of BA usage (Bany Mohammad et al., 2022). This understanding helps organizations stay competitive and responsive to market changes.

Sri Lankan Context

Many studies related to finding factors affecting BA or BA-related segments have been done in countries such as India, North America, South Africa, and Nigeria. The literature review revealed that limited research has been done in the Sri Lankan context. For instance very few studies like the research done by (Bolonne & Wijewardene, 2020) has focused on identifying the critical factors that influence the attitude toward using Big Data analytics in apparel sector organizations in Sri Lanka. Furthermore, the research done by (Rajapaksha et al., 2022) highlights the impact of Organizational Culture on the use of business analytics in Sri Lankan companies.

The critical factors influencing the maturity of business analytics (BA) can vary significantly across different industries and countries. (Saravanabhavan et al., 2023) states that India is unique and has its specific factors. It implies that country-to-country factors affecting the maturity of BA can differ. Hence it is worthwhile to do research specifically for Sri Lanka to identify the specific factors within the Sri Lankan context.

In Sri Lanka, the apparel and software industries present unique contexts that shape BA adoption and maturity. The apparel industry, characterized by its focus on manufacturing and supply chain efficiency, may face distinct challenges related to data integration, legacy systems, and regulatory compliance. Conversely, the software industry, driven by innovation and technology, might prioritize factors such as advanced IT infrastructure, talent management, and competition pressure. Additionally, the regulatory environment, government support, and market dynamics in Sri Lanka influence how these industries approach BA differently. Understanding these industry-specific and country-specific factors is essential for developing tailored strategies that enhance BA maturity and drive competitive advantage in Sri Lanka's diverse economic landscape.

Results and Discussion

Based on the analysis done in this systematic literature review, several factors were identified as factors that could influence the maturity of Business Analytics within the TOE framework.

According to the analysis conducted in Table 1, technological factors such as compatibility, data management, data infrastructure, technology supporting infrastructure, trust-in-technology, technology assets, technology competence, and security and privacy were emphasized. Among these factors, compatibility, data management, data infrastructure, and technology-supporting infrastructure were found more frequently in past literature (Refer Table 1), reflecting their importance in the successful implementation and maturation of business analytics systems. These factors are critical as they provide the foundational capabilities that enable organizations to effectively manage and utilize vast amounts of data, ensuring the integration of analytics into business processes.

Similarly, according to the analysis conducted in Table 2, organizational factors included vision and strategy, organizational readiness, top management support, organizational culture, organizational

structure, presence of champions, and talent management challenges. Among these factors, top management support and organizational culture were highlighted as the most potential organizational factors considering the number of references found (Refer Table 2). Top management support is crucial as it drives the adoption and implementation of business analytics, aligning it with organizational goals and providing the necessary resources. Organizational culture implements a data-driven decision-making environment, which is essential for the successful integration and use of analytics in daily operations.

According to the analysis in Table 3, environmental factors include regulations, government support, competition pressure, external market influence, and industry type. The most critical factors, as determined by the number of references and emphasis in the literature, were regulations, competition pressure, and external market influence (Refer Table 3). These environmental factors highlight the external forces that influence the adoption and maturity of business analytics.

Most studies in this literature review were conducted in different geographical contexts such as Nigeria (Adzandeh et al., 2024), South Africa (Lautenbach et al., 2017), India (Saravanabhavan et al., 2023), (Soni et al., 2023), North America (Madhlangobe, 2019) and Slovenia (Popovič et al., 2012) etc. Very few studies were identified related to the Sri Lankan context (Rajapaksha et al., 2022) and (Bolonne & Wijewardene, 2020). Hence, the above-mentioned factors can be identified as potential critical factors that could influence the maturity of business analytics in the apparel and software industries in Sri Lanka. However, the significant gap in research focused on the Sri Lankan context indicates a need for localized research to validate whether these identified factors hold the same level of importance and impact within Sri Lanka.

Conclusion and Recommendations

This literature review has identified and analyzed the potential critical factors that can influence the maturity of business analytics within the apparel and software industries, primarily through the Technology-Organization-Environment (TOE) framework. The most prominent factors include compatibility, data management, data infrastructure, technology-supporting infrastructure, top management support, organizational culture, regulations, competition pressure, and external market influence. These factors were consistently emphasized across multiple studies, underscoring their pivotal role in successful business analytics adoption and implementation. However, there is a notable gap in the literature regarding the Sri Lankan context. This highlights the need for localized studies to validate the relevance and impact of these factors within Sri Lanka's unique industrial landscape.

The factors identified in this systematic literature review are only the potential influences on the maturity of Business Analytics in the software and apparel industries in Sri Lanka. While these factors are recognized for their significance in broader contexts, their validity in the Sri Lankan context should be tested to confirm their applicability and impact. Future research should focus on empirically testing these identified factors within Sri Lanka's software and apparel industries. This can involve conducting surveys, case studies, and other research methodologies to gather data and analyze the relevance of these factors. By doing so, researchers can develop a more precise understanding of how these factors influence business analytics maturity in these specific industries and tailor strategies that address the unique challenges and opportunities present in Sri Lanka. Therefore, it is recommended that future researchers validate these factors in the Sri Lankan context to contribute to the advancement of business analytics maturity in the country.

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