European Proceedings of
Social and Behavioural Sciences
EpSBS

www.europeanproceedings.com
e-ISSN: 2357-1330

DOI: 10.15405/epsbs.2023.11.17

ICTHM 2023
International Conference in Technology, Humanities and Management

IMPACT OF SUPPLY CHAIN GOVERNANCE AND ERP APPLICATION ON CREATING COMPETITIVE ADVANTAGE

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Abstract

Supply chain governance (SCG) and Enterprise Resource Planning (ERP) applications play a crucial role in creating a competitive advantage for businesses. Effective SCG involves optimizing the flow of goods, services, and information between different entities in the supply chain, while ERP applications provide a centralized platform for managing operations and accessing critical information. This study aims to examine the impact of SCG and ERP applications on creating a competitive advantage. Drawing on theories such as the Resource-Based View (RBV), Dynamic Capabilities theory, Transaction Cost Economics (TCE), Institutional Theory, and Absorptive Capacity Theory, the study explores how these technologies contribute to cost reduction, improved customer service, enhanced coordination, operational efficiency, and the ability to adapt to changing market conditions. The findings highlight the importance of leveraging SCG and ERP applications effectively to gain a competitive edge, improve overall performance, and achieve sustained growth and profitability. This research provides valuable insights for organizations seeking to optimize their supply chain operations and maximize the benefits of ERP applications in the pursuit of competitive advantage.

Keywords: Competetive Advantage, ERP, Strategic Management, Supply Chain Governance

https://doi.org/10.15405/epsbs.2023.11.17
Corresponding Author: Gonca Reyhan Akkartal
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. Introduction

Supply chain governance refers to the coordinated management of activities involved in the production and distribution of goods and services from the supplier to the final consumer. It encompasses various functions, including sourcing raw materials, transportation, manufacturing, warehousing, inventory management, and delivery. Effective supply chain governance ensures the seamless flow of goods and services, reducing costs, enhancing customer satisfaction, and improving profitability. With globalization and technological advancements, supply chain governance has become a crucial element in the success of businesses across various industries (Zekhnini et al., 2020).

Enterprise Resource Planning (ERP) applications play a vital role in supply chain governance as they provide businesses with a centralized system for managing all their operations. These applications enable organizations to monitor and control their entire supply chain, from procurement to delivery, in real-time. ERP applications facilitate better decision-making, improve efficiency, and reduce costs by integrating various functions such as inventory management, order tracking, and production planning. With the help of ERP applications, businesses can also improve communication and collaboration with suppliers, customers, and other stakeholders, leading to enhanced visibility and transparency throughout the supply chain (Tarigan et al., 2021). Ultimately, the use of ERP applications in supply chain governance can lead to increased competitiveness, improved customer satisfaction, and higher profitability.

Creating a competitive advantage is critical for any business's success and long-term sustainability. It allows businesses to differentiate themselves from their competitors, attract and retain customers, and ultimately achieve greater profitability. Creating a sustainable competitive advantage is becoming increasingly challenging in today's dynamic and fast-paced business environment. However, businesses that can successfully develop and maintain a competitive advantage can gain significant benefits, such as increased market share, improved customer loyalty, and reduced pricing pressure. Creating a competitive advantage requires a deep understanding of the company's strengths, weaknesses, opportunities, and threats, as well as a clear strategy for leveraging these factors to differentiate the business in the marketplace (Arsawan et al., 2022).

In several ways, companies can create a competitive advantage through supply chain governance and ERP applications. Firstly, by optimizing their supply chain operations with the help of ERP applications, companies can reduce costs, improve delivery times, and enhance product quality. This can lead to increased customer satisfaction and loyalty, helping businesses to stand out from their competitors. Secondly, ERP applications give businesses real-time visibility into their supply chain, enabling them to quickly identify inefficiencies and bottlenecks. By addressing these issues promptly, companies can improve their operational efficiency, minimize waste, and enhance their responsiveness to changing customer demands. Thirdly, ERP applications can help companies to collaborate more effectively with their suppliers, customers, and other stakeholders. By sharing information and coordinating their activities, businesses can improve their supply chain's overall efficiency and effectiveness, leading to increased profitability and competitive advantage. Finally, by leveraging the data generated by ERP applications, companies can gain valuable insights into their supply chain performance, customer behavior, and market trends. This can help them to identify new opportunities for growth and

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innovation, allowing them to stay ahead of their competitors and maintain their competitive edge over the long term (Heredia-Calzado & Duréndez, 2019).

This study aims to investigate the impact of ERP (Enterprise Resource Planning) and SCG (Supply Chain Governance) applications on creating competitive advantage for businesses. Drawing upon the Resource-Based View (RBV) theory, Dynamic Capabilities theory, Transaction Cost Economics (TCE), Institutional Theory, and Absorptive Capacity Theory, the study examines the conceptual approaches to ERP, the obligations, difficulties, and advantages associated with its implementation, as well as the need for utilizing SCG applications for efficient management of complex supply chain processes and the benefits of integrating SCG applications with ERP systems. The discussion and conclusion sections provide a theoretical evaluation of the research findings and offer practical suggestions for businesses seeking to leverage ERP and SCG applications to create a competitive advantage. By exploring the impact of these applications on businesses, this study contributes to the existing body of knowledge on ERP and SCG applications and their role in enhancing business performance and competitiveness.

2. Literature Review

2.1. Concept of Supply chain governance

Supply chain governance (SCG) is a broad and complex field that has been defined in various ways by scholars and practitioners. According to the Council of Supply chain governance Professionals (CSCGP), SCG is the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers (Bonatto et al., 2022).

Mentzer et al. (2001) define Supply Chain Governance as the systemic, strategic coordination of the traditional business functions and tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.

Chopra et al. (2007) define SCG as the coordination of activities involved in the flow of goods and services from the supplier to the end-user. This includes activities such as sourcing, production, transportation, warehousing, and customer service. Cooper et al. (1997) define SCG as the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole.

Supply chain governance encompasses several functions that are critical to the successful operation of businesses. One of them is procurement which refers to the process of acquiring the goods and services needed for a business's operations. Effective procurement involves sourcing quality raw materials, negotiating favorable contracts with suppliers, and managing supplier relationships to ensure timely delivery and optimal pricing. Another function Is transportation and logistics which involve the movement of goods and services from the supplier to the final consumer. Effective transportation and logistics management requires careful planning and coordination of shipping, warehousing, and delivery activities to ensure the timely and cost-effective delivery of goods (Chauhan & Singh, 2020).

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Inventory management is accepted as one of the functions of SCG and involves maintaining an optimal level of inventory to ensure that businesses can meet customer demand while minimizing storage costs and waste. Effective inventory management requires accurate forecasting of demand, efficient order processing, and real-time tracking of inventory levels (Becerra et al., 2022). Furthermore, production planning and scheduling is SCG function and refers to the optimization of production processes to ensure that businesses can meet customer demand while minimizing costs and maximizing efficiency. Effective production planning and scheduling require the coordination of manufacturing processes, the management of resources, and the tracking of production progress. Last but not the least, demand forecasting involves the prediction of future customer demand based on historical data and market trends. Accurate demand forecasting is critical to ensuring that businesses can plan and allocate resources effectively and avoid overproduction or stockouts (Nunes et al., 2020).

2.2. ERP Applications

Enterprise Resource Planning (ERP) applications are widely used by businesses to manage their operations and support decision-making. ERP systems are designed to integrate various business processes and functions, including accounting, finance, procurement, manufacturing, sales, and marketing, into a centralized system that facilitates real-time information sharing and decision-making (Kumar & Van Hillegersberg, 2000).

ERP systems can improve organizational efficiency and productivity by providing a single source of information that supports accurate forecasting, planning, and decision-making (Febrianto & Soediantono, 2022). This can lead to cost savings, improved customer service, and increased profitability. Successful implementation of ERP systems requires careful planning, management, and training to ensure effective use and adoption by employees (Qachar & Nacer, 2023). Failure to do so can result in cost overruns, delays, and low user adoption rates. The benefits of ERP systems are not guaranteed, and depend on several factors, including the organizational culture, business processes, and IT infrastructure (Yathiraju, 2022). Therefore, careful consideration of the organization's needs, goals, and resources is critical when selecting and implementing an ERP system.

ERP systems can also support supply chain governance by providing real-time visibility into inventory levels, demand forecasting, and production planning, enabling businesses to respond quickly to changing customer needs and market trends (Morawiec & Sołtysik-Piorunkiewicz, 2022). ERP applications are designed to integrate various business functions into a centralized system that supports real-time information sharing and decision-making. Effective implementation requires careful planning, management, and training, and can lead to significant benefits, including improved organizational efficiency, productivity, and profitability. ERP systems can also support supply chain governance by providing real-time visibility into critical information and enabling businesses to respond quickly to changing market demands (Kitsantas, 2022).

ERP (Enterprise Resource Planning) systems are designed to integrate various business functions and processes into a centralized system that supports real-time information sharing and decision-making. ERP systems provide organizations with a centralized platform for managing financial processes such as accounting, financial reporting, budgeting, and cash flow management. This function helps organizations

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to monitor their financial performance and make informed financial decisions (Rashid et al., 2002). ERP systems can support supply chain governance by providing real-time visibility into inventory levels, demand forecasting, and production planning. This function helps organizations to respond quickly to changing market demands and optimize their supply chain operations (Granlund & Malmi, 2002).

Furthermore, ERP systems can help organizations to manage their human resource processes, including recruitment, employee performance, payroll management, and benefits administration. This function helps organizations to manage their workforce effectively and optimize their human resource processes. It also helps organizations to manage their customer relationships by providing a centralized platform for customer information management, sales management, marketing automation, and customer service management. This function helps organizations to improve customer engagement and retention. Finally, ERP systems can support manufacturing and production processes by providing real-time visibility into production planning, scheduling, and monitoring. This function helps organizations to optimize their production processes, reduce production costs, and improve product quality (Morawiec & Sołtysik-Piorunkiewicz, 2022).

2.2.1. Obligations of ERP Applications

ERP (Enterprise Resource Planning) applications come with several obligations that businesses must consider before implementing the software. One of the main obligations of implementing an ERP application is the significant upfront investment required. This includes the cost of purchasing the software, hardware, and infrastructure required to support the system. Implementation costs can also be significant, as businesses may need to hire external consultants or allocate internal resources to configure and customize the software to their specific needs. In addition, implementing an ERP application requires technical expertise and resources. Businesses must ensure that they have the necessary technical expertise to install and configure the software, as well as to maintain and support the system. This can involve training existing staff or hiring new employees with the necessary technical skills (Munthe, 2022).

Another obligation of implementing an ERP application is the need for data management and security. ERP systems require a significant amount of data to function effectively, and businesses must ensure that this data is accurate, complete, and secure. This can involve developing data management policies and procedures, establishing data backup and recovery processes, and implementing security measures to protect sensitive information. Finally, businesses must consider the obligation of ongoing maintenance and upgrades. ERP systems require regular maintenance, updates, and upgrades to ensure that they remain effective and up-to-date. This can involve dedicating internal resources or outsourcing these tasks to external vendors (Kashyap, 2020).

2.3. Advantages of Integrating Supply chain governance with ERP

The integration of SCG (Supply chain governance) applications with ERP (Enterprise Resource Planning) systems can provide several advantages to businesses. Firstly, systems can provide real-time visibility into the supply chain, enabling businesses to monitor inventory levels, track shipments, and manage supplier relationships more effectively. Furthermore, the integration of SCG applications with ERP systems enables better coordination and collaboration between different entities in the supply chain,

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including suppliers, manufacturers, and distributors. This can lead to improved communication, better decision-making, and reduced lead times (Kumar & Van Hillegersberg, 2000).

The integration of SCG applications with ERP systems can lead to streamlined operations, reduced redundancy, and improved efficiency. By providing a centralized platform for managing data and processes, businesses can optimize their operations and reduce costs. It also enables businesses to respond quickly to customer needs, track orders, and manage customer interactions effectively. This can lead to improved customer satisfaction and loyalty. Last but not the least, it can improve the quality and accuracy of data, reducing errors and enabling better decision-making. By providing a single source of truth for data, businesses can improve their overall performance and gain a competitive advantage (Febrianto & Soediantono, 2022).

2.4. Creating Competitive Advantage

Creating a competitive advantage is essential for the success and long-term sustainability of any business. Porter (1985) argued that creating a competitive advantage requires a business to differentiate itself from its competitors by offering unique value to customers through superior product quality, customer service, or pricing strategies. Businesses that can successfully create a competitive advantage can gain market share, increase profitability, and maintain their position in the marketplace. Barney (1991) proposed the resource-based view of the firm, which suggests that a business's competitive advantage is based on its unique and valuable resources, such as specialized knowledge, technology, or human capital. Businesses that can leverage their resources effectively can gain a competitive advantage over their competitors.

Prahalad and Hamel (1990) introduced the concept of core competencies, which refers to the unique strengths and capabilities of a business that enable it to offer superior value to customers. Businesses that can develop and leverage their core competencies can gain a competitive advantage and achieve sustained growth and profitability. Grant (1991) argued that businesses must continuously innovate and adapt to changing market conditions to maintain a competitive advantage. This requires businesses to invest in research and development, stay up-to-date on industry trends, and foster a culture of innovation and creativity.

Several studies have emphasized the importance of innovation and technology in creating a competitive advantage. Businesses that invest in research and development, and are at the forefront of technological advancements in their industry, can gain a competitive edge over their competitors. Businesses that focus on understanding their customers' needs and preferences and delivering superior value to them can create a sustainable competitive advantage. This requires businesses to engage in continuous market research, customer feedback, and personalized customer experiences (Ge et al., 2022).

Furthermore, studies have highlighted the importance of developing unique and valuable resources and capabilities that are difficult for competitors to imitate (Helfat & Peteraf, 2015). This can involve investing in human capital, specialized knowledge, and innovative business models. With rapidly changing market conditions and evolving customer preferences, businesses that are flexible and adaptable can maintain a competitive advantage over time (Teece et al., 2016). This requires businesses to be agile and responsive to changing market conditions, as well as to foster a culture of innovation and creativity.

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In addition, several studies have emphasized the importance of strategic partnerships in creating a competitive advantage. Businesses that develop strong relationships with suppliers, customers, and other stakeholders can gain access to unique resources, knowledge, and expertise (Krakowski et al., 2023).

3. Methodology

This study adopts a literature review methodology to explore the role of Enterprise Resource Planning (ERP) and Supply Chain Governance (SCG) applications in creating a competitive advantage for organizations. The literature review approach enables a comprehensive analysis of existing scholarly research, theories, and empirical studies related to the topic.

The data collection process involves gathering relevant scholarly articles, academic journals, conference proceedings, and books from reputable databases such as Scopus, PubMed, and Google Scholar. Keywords used for the search include "ERP applications," "SCG applications," "competitive advantage," "theory," and "literature review." The selection criteria for the literature include relevance to the research topic, theoretical frameworks, and empirical findings.

The collected literature is analyzed using a thematic approach. The identified articles are categorized based on the theories they employ to examine the relationship between ERP/SCG applications and competitive advantage. The theoretical frameworks utilized in the literature are identified and further analyzed to understand their implications in the context of ERP and SCG applications. The identified theories, namely Resource-Based View (RBV), Dynamic Capabilities Theory, Transaction Cost Economics (TCE), Institutional Theory, and Absorptive Capacity Theory, form the foundation for the analysis of the literature. Each theory is examined in terms of how it contributes to understanding the role of ERP and SCG applications in creating a competitive advantage. The theoretical frameworks guide the analysis and interpretation of the literature, allowing for a comprehensive understanding of the research topic.

Based on the findings from the literature review, a synthesis of the key themes, theories, and empirical evidence is conducted. The synthesized information is then discussed in relation to the research objectives, providing insights into the role of ERP and SCG applications in achieving a competitive advantage. The discussion highlights the theoretical contributions, empirical findings, and implications for practice.

It is important to acknowledge the limitations of this study. As a literature review, the findings are based on existing research and may be subject to publication bias. The scope of the study is limited to the theories identified and may not encompass all possible theoretical frameworks relevant to the research topic.

4. Theoretical Framework

In today's competitive business landscape, organizations strive to gain a sustainable competitive advantage that enables them to outperform their rivals and thrive in the market. Supply chain Governance (SCG) and Enterprise Resource Planning (ERP) applications have emerged as key technological enablers in achieving this advantage. This theoretical framework draws upon various theoretical perspectives to

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explore the effects of ERP and SCG applications on organizational competitive advantage. The Resource-Based View (RBV) theory, Dynamic Capabilities theory, Transaction Cost Economics (TCE), Institutional theory, and Absorptive Capacity theory provide valuable insights into the mechanisms through which these technologies enhance competitiveness.

4.1. Resource-Based View (RBV) Theory

The Resource-Based View (RBV) theory is a widely recognized and influential theory in strategic management. It suggests that a firm's competitive advantage and performance are determined by the unique resources and capabilities it possesses. According to the RBV theory, resources can be tangible (e.g., physical assets, technology) or intangible (e.g., knowledge, brand reputation), and capabilities refer to an organization's ability to utilize and deploy its resources effectively (Kruesi & Bazelmans, 2023).

In the context of ERP and SCG applications, the RBV theory emphasizes the significance of the valuable resources provided by these technologies. ERP systems offer real-time information, integration of various business functions, and data-driven insights, while SCG applications facilitate effective coordination and management of supply chain activities. These resources enable organizations to streamline their operations, enhance decision-making processes, and improve overall supply chain performance (Estensoro et al., 2022).

In summary, the RBV theory provides a valuable framework for understanding the role of ERP and SCG applications in creating a competitive advantage. It highlights the importance of leveraging the unique resources and capabilities offered by these technologies to enhance supply chain operations, decision-making, and overall performance. By adopting and effectively utilizing ERP and SCG resources, organizations can strive for sustained success in today's dynamic business environment.

4.2. Dynamic Capabilities Theory

The Dynamic Capabilities theory is a theoretical framework that focuses on an organization's ability to adapt and respond to changing market conditions. It recognizes that in today's dynamic business environment, organizations need to possess the capability to sense, seize, and transform resources and capabilities to maintain a competitive advantage (Balić et al., 2022).

In the context of ERP and SCG applications, the Dynamic Capabilities theory explores how these technologies contribute to an organization's dynamic capabilities. ERP systems provide organizations with real-time data, visibility into various business processes, and the ability to integrate and coordinate activities across the supply chain. SCG applications enable organizations to manage and optimize their supply chain operations, including procurement, inventory management, and logistics. By leveraging these technologies, organizations can enhance their ability to sense changes in the market, seize new opportunities, and transform their operations to stay competitive (Yathiraju, 2022).

4.3. Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE) theory offers a framework for understanding the factors influencing the governance and coordination of transactions within supply chains. It recognizes that

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economic transactions between different entities involve costs beyond the actual price of the goods or services exchanged. These transaction costs include search and information costs, bargaining and negotiation costs, monitoring and enforcement costs, and relationship-specific investments (Alagah, 2021).

In the context of ERP and SCG applications, TCE theory examines how these technologies can help reduce transaction costs and improve the efficiency of supply chain operations. ERP systems provide a centralized platform for managing and sharing information across different functions and entities within the supply chain. This enables better coordination, communication, and information flow, thereby reducing search and information costs. SCG applications, on the other hand, streamline processes such as procurement, inventory management, and logistics, leading to cost savings and more efficient transactions (Faccia & Petratos, 2021).

The analysis of ERP and SCG applications through the lens of TCE theory uncovers the mechanisms through which these technologies create efficiencies and cost savings. Minimizing transaction costs, help organizations achieve a competitive advantage by offering products or services at a lower cost, improving profitability, and enhancing customer satisfaction. Additionally, reduced uncertainties and risks associated with transactions can lead to more stable and reliable supply chain relationships (Patil et al., 2023).

4.4. Institutional Theory

Institutional Theory provides a lens through which to examine the influence of external institutional factors on the adoption and implementation of ERP and SCG applications within organizations. It recognizes that organizations are embedded within a broader institutional environment that consists of societal norms, regulations, and expectations. These institutional pressures can significantly shape organizations' decisions regarding technology adoption and implementation (Geels, 2020).

In the context of ERP and SCG applications, Institutional Theory explores how organizations respond to external pressures and conform to institutional expectations. It examines the role of industry norms, government regulations, and customer demands in influencing organizations' choices regarding the adoption and use of these technologies. Researchers analyze how organizations strategically align their practices with prevailing institutional rules and expectations to gain legitimacy and competitive advantage (Hartley et al., 2022).

The analysis of institutional factors and their interaction with ERP and SCG applications provides insights into the dynamics of organizational decision-making and strategic responses to external pressures. It helps understand how organizations navigate the institutional environment to gain competitive advantage while conforming to prevailing norms and expectations. Additionally, by aligning their practices with institutional pressures, organizations can enhance their legitimacy, reputation, and stakeholder relationships (Hartley et al., 2022).

Institutional Theory contributes to our understanding of how ERP and SCG applications are adopted and implemented within organizations. By considering the influence of institutional factors, researchers and practitioners can gain insights into the external pressures that shape organizations'

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technology-related decisions. Understanding the interplay between institutional pressures and ERP/SCG applications allows organizations to strategically align their practices, gain legitimacy, and enhance their competitive advantage in a changing institutional environment (Geels, 2020).

4.5. Absorptive Capacity Theory

Absorptive Capacity Theory is a framework that examines how organizations acquire and leverage external knowledge to enhance their competitive advantage. It emphasizes the organization's ability to effectively absorb, assimilate, and utilize knowledge from external sources. In the context of ERP and SCG applications, Absorptive Capacity Theory focuses on how organizations develop the capability to absorb and integrate knowledge from these technologies to improve their operational efficiency and decision-making processes (Kwahk et al., 2020).

ERP and SCG applications provide organizations with access to a wealth of knowledge and information related to supply chain operations, customer preferences, market trends, and internal processes. Absorptive Capacity Theory explores how organizations develop the necessary mechanisms, processes, and routines to effectively acquire and assimilate this knowledge. It involves creating a receptive and learning-oriented organizational culture, developing information-sharing networks, and fostering collaboration among employees and external stakeholders.The theory also examines the organization's ability to integrate the acquired knowledge into its existing knowledge base and operational practices. This integration allows organizations to enhance their decision-making processes, optimize supply chain operations, and gain a competitive advantage (Wu et al., 2022).

Table 1 provides a comprehensive overview of how different theoretical frameworks are applied in the study of ERP and SCG applications for competitive advantage. The table highlights the specific theories used in the study and their corresponding applications.

Table 1. Application of Theoretical Frameworks in the Study of ERP and SCG Applications for Competitive Advantage

Theory	Application in the Study
Resource-Based View (RBV)	- Examining the valuable resources provided by ERP and SCG applications in enhancing competitive advantage. - Understanding how these technologies optimize supply chain operations and improve decision-making.
Dynamic Capabilities Theory	- Investigating how ERP and SCG applications contribute to organizations' ability to adapt and respond to dynamic market conditions. - Exploring the relationship between these technologies and organizations' dynamic capabilities for sustained competitive advantage.
Transaction Cost Economics	- Analyzing how ERP and SCG applications reduce transaction costs within supply chains. - Understanding how these technologies improve information flow, communication, collaboration, and reduce uncertainties and risks associated with transactions.
Institutional Theory	- Examining the influence of institutional pressures on the adoption and implementation of ERP and SCG applications. - Understanding how organizations navigate the institutional environment to gain a competitive advantage aligned with prevailing norms and expectations.
Absorptive Capacity Theory	- Exploring how organizations develop the capability to absorb and integrate knowledge from ERP and SCG applications. - Understanding how effective utilization of external knowledge resources enhances operational efficiency and decision-making, leading to a competitive advantage.

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5. Findings

Supply chain governance (SCG) can contribute to competitive advantage in several ways. SCG can help businesses reduce costs by optimizing their supply chain operations, streamlining processes, and minimizing waste. This can result in cost savings that can be passed on to customers, making the business more competitive in terms of pricing. Secondly, SCG can improve customer service by ensuring that products are delivered on time, reducing lead times, and improving overall product quality. This can lead to increased customer loyalty and retention, giving businesses a competitive edge over their rivals. Furthermore, it can provide businesses with real-time visibility into their supply chain operations, enabling them to identify inefficiencies and bottlenecks quickly. This can help businesses make better decisions, improve responsiveness to changing customer demands, and gain a competitive advantage (Santoso et al., 2022).

Thanks to supply chain governance, businesses collaborate more effectively with their suppliers, customers, and other stakeholders, leading to enhanced coordination and improved overall efficiency. This can help businesses to respond more quickly to changing market conditions, reducing lead times and costs, and improving customer satisfaction. It also contributes to innovation and product development by enabling businesses to collaborate more effectively with suppliers, customers, and other stakeholders. This can lead to the development of new products and services, improved product quality, and enhanced customer satisfaction, all of which can contribute to a competitive advantage (Chen et al., 2019).

ERP (Enterprise Resource Planning) applications can contribute to competitive advantage in several ways. Firstly, ERP applications can help businesses optimize their operations by providing real-time visibility into their business processes, enabling them to identify inefficiencies and bottlenecks quickly. This can lead to improved operational efficiency, reduced costs, and improved product quality, giving businesses a competitive advantage. ERP applications provide businesses with accurate and timely data, enabling them to make informed decisions quickly. This can help businesses to respond to market changes more effectively, improve their overall performance, and gain a competitive advantage (Sheik & Sulphey, 2020).

Moreover, ERP applications can provide businesses with a centralized platform for managing their data, enabling them to access critical information quickly and efficiently. This can lead to improved data accuracy, reduced data redundancy, and improved data security, contributing to a competitive advantage. Thanks to ERP applications businesses improve their customer service by enabling them to track customer orders, preferences, and interactions. Last but not the least with ERP applications, businesses can optimize their supply chain operations by providing real-time visibility into inventory levels, demand forecasting, and production planning. This can help businesses to respond quickly to changing market demands, reduce lead times and costs, and improve customer satisfaction, giving them a competitive advantage (Amado & Belfo, 2021).

The findings of the study also align with various theoretical perspectives that provide insights into the relationship between SCG, ERP applications, and competitive advantage. The Resource-Based View (RBV) theory emphasizes the importance of leveraging unique resources and capabilities within an organization to gain a competitive advantage. In the context of SCG and ERP applications, the RBV theory supports the idea that these technologies provide valuable resources such as real-time information,

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enhanced coordination, and streamlined processes, which can be leveraged to optimize supply chain operations and improve decision-making, thus contributing to competitive advantage.

The Dynamic Capabilities theory focuses on organizations' ability to adapt and respond to dynamic market conditions. In relation to SCG and ERP applications, this theory highlights the role of these technologies in enabling organizations to quickly adjust their operations, optimize processes, and capitalize on emerging opportunities. By enhancing organizations' ability to respond and adapt, SCG and ERP applications contribute to sustained competitive advantage in a rapidly changing business environment.

Transaction Cost Economics (TCE) theory provides insights into how SCG and ERP applications can reduce transaction costs within supply chains. These technologies improve information flow, communication, collaboration, and help mitigate uncertainties and risks associated with transactions. By minimizing transaction costs, SCG and ERP applications create efficiencies and cost savings, ultimately leading to enhanced competitive advantage.

Institutional Theory sheds light on the influence of institutional pressures on the adoption and implementation of SCG and ERP applications. The theory highlights how industry norms, regulations, and customer expectations shape the decision-making process regarding these technologies. Organizations that align their SCG and ERP practices with prevailing norms and expectations gain a competitive advantage by navigating the institutional environment effectively.

Lastly, Absorptive Capacity theory emphasizes the role of organizations in acquiring, assimilating, and utilizing external knowledge. In the context of SCG and ERP applications, this theory highlights how organizations develop the capability to absorb and integrate knowledge from these technologies. By effectively utilizing external knowledge resources, organizations enhance their operational efficiency, improve decision-making processes, and gain a competitive advantage.

In conclusion, the findings of the study support these theoretical perspectives by demonstrating how SCG and ERP applications contribute to competitive advantage through their ability to optimize supply chain operations, enhance coordination, improve decision-making, reduce costs, and facilitate adaptation to dynamic market conditions. These theories provide a conceptual framework to understand the mechanisms through which SCG and ERP applications create competitive advantages for organizations in the ever-evolving business landscape.

6. Conclusion

Creating a competitive advantage is crucial for businesses to succeed and thrive in today's competitive marketplace. A competitive advantage enables a business to differentiate itself from its competitors, by offering unique value to customers, providing superior quality products or services, and operating more efficiently. This differentiation can lead to increased market share, higher profitability, and long-term sustainability. A competitive advantage also enables a business to respond quickly to changes in the market, adapt to new trends, and continuously innovate to maintain its position in the marketplace. Without a competitive advantage, a business risks becoming irrelevant or losing market share to its competitors. Therefore, creating a sustainable competitive advantage should be a key priority for businesses of all sizes and industries.

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Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

Successful supply chain governance and ERP applications can provide businesses with a competitive advantage by optimizing their operations, improving customer service, providing real-time visibility and transparency, enabling collaboration and coordination, and contributing to innovation and product development. By leveraging these tools effectively, businesses can gain a competitive edge over their competitors, improve their overall performance, and achieve sustained growth and profitability. However, to realize these benefits, businesses must invest in the necessary resources, plan and execute carefully, and continuously monitor and adapt to changing market conditions. By doing so, businesses can gain a sustainable competitive advantage and establish themselves as leaders in their industry.

Moreover, gaining a competitive advantage through successful supply chain governance and ERP applications is not a one-time event but requires continuous improvement and innovation. As the business landscape and customer preferences evolve, businesses must adapt their supply chain and ERP strategies accordingly. This requires ongoing investment in technology, talent development, and process improvement. By continuously improving their supply chain and ERP systems, businesses can enhance their competitive advantage, improve their customer experience, and increase their market share. In today's hyper-competitive business environment, gaining a competitive advantage through successful supply chain governance and ERP applications is critical for businesses to remain relevant, grow, and succeed over the long term.

Integrating SCG (Supply chain governance) applications with ERP (Enterprise Resource Planning) systems can provide businesses with a competitive advantage by improving supply chain visibility, streamlining operations, and enhancing customer service. To effectively integrate SCG applications with ERP systems, businesses should align their business processes, plan carefully, invest in technology, ensure data quality, provide training and support, and continuously improve their systems. By aligning business processes, businesses can identify the key processes and functions that need to be integrated and ensure that they are compatible with the ERP system. Planning carefully involves developing a detailed implementation plan that outlines the steps involved, timelines, and resource requirements. Investing in technology can help streamline the integration process and ensure that data is transferred accurately and securely. Ensuring data quality is critical to the success of integration, requiring businesses to ensure that data is accurate, complete, and consistent across all systems. Providing training and support can help employees use the new systems effectively and embrace the changes it brings. Finally, businesses should continuously improve their SCG and ERP systems to stay competitive by identifying areas for improvement and leveraging technology and data to improve performance.

In conclusion, the findings of this study highlight the significance of various theories in understanding the relationship between supply chain management (SCG), Enterprise Resource Planning (ERP) applications, and competitive advantage. The Resource-Based View (RBV) theory emphasizes the importance of leveraging unique resources and capabilities provided by SCG and ERP applications to optimize supply chain operations and decision-making. The Dynamic Capabilities theory emphasizes the role of these technologies in enabling organizations to adapt and respond to dynamic market conditions, thereby gaining a sustained competitive advantage. Transaction Cost Economics (TCE) theory highlights how SCG and ERP applications reduce transaction costs and create efficiencies within supply chains. Institutional Theory provides insights into how organizations navigate institutional pressures to adopt and

implement SCG and ERP applications, aligning with prevailing norms and gaining a competitive edge. Lastly, Absorptive Capacity theory underscores the importance of organizations' ability to absorb and integrate external knowledge from SCG and ERP applications to enhance operational efficiency and decision-making. These theories collectively contribute to a comprehensive understanding of how SCG and ERP applications can be leveraged to gain a competitive advantage in today's business environment. By considering these theories, organizations can make informed decisions, optimize their supply chain operations, enhance coordination, reduce costs, and effectively adapt to changing market conditions, ultimately positioning themselves for success in the global marketplace.

For future studies, several suggestions can be made to further expand the understanding of the relationship between supply chain management (SCG), Enterprise Resource Planning (ERP) applications, and competitive advantage. Firstly, conducting empirical research that examines the actual implementation and impact of SCG and ERP applications in different industries and organizational contexts would provide valuable insights. This would involve gathering data on the specific strategies, practices, and technologies employed by organizations to achieve competitive advantage through SCG and ERP applications. Additionally, comparative studies can be conducted to analyze the effectiveness of different SCG and ERP approaches in various industries and regions. Furthermore, investigating the role of emerging technologies such as blockchain, artificial intelligence, and data analytics in enhancing SCG and ERP capabilities would provide a deeper understanding of their potential impact on competitive advantage. Lastly, exploring the influence of cultural and contextual factors on the adoption and implementation of SCG and ERP applications can contribute to a more comprehensive understanding of how organizations can effectively leverage these technologies across different cultural and regional settings.

Acknowledgment

The authors are grateful to the Accounting Research Institute, (ARI- HICoE), Universiti Teknologi MARA, Shah Alam, Malaysia, and the Ministry of Higher Education for providing research funding.

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