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The Impact of Cloud Computing on Supply Chain Management in Small and Medium Enterprises (SMEs)

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Abstract: Small and Medium Enterprises (SMEs) are increasingly adopting cloud computing to optimize their supply chain management (SCM) processes. While cloud computing has shown positive results in large enterprises, its impact on SMEs remains less explored. SMEs face unique challenges, including limited resources and technical expertise, making it essential to understand the specific benefits and obstacles they encounter when adopting cloud-based SCM solutions. **Objective:** This research aims to investigate the impact of cloud computing on SCM in SMEs, focusing on the benefits, challenges, and overall performance improvements brought about by cloud adoption. The study seeks to fill the gap in existing literature by addressing the specific needs and barriers faced by SMEs. **Methodology:** A mixed-methods approach was used, combining quantitative surveys and qualitative semi-structured interviews. The survey targeted SMEs that adopted cloud-based SCM solutions, collecting data on perceived benefits, challenges, and performance metrics. In-depth interviews were conducted with key decision-makers to explore their experiences and strategies. Data analysis included descriptive statistics and regression analysis for the quantitative data, and thematic analysis for the qualitative data. **Findings:** The study found that 85% of SMEs adopted cloud-based SCM systems, with notable benefits including cost reduction (68%), improved efficiency (70%), and better collaboration (60%). However, challenges such as data security concerns (72%) and integration with legacy systems (58%) were prevalent. Despite these challenges, SMEs reported a 17% reduction in operational costs and an 18% improvement in inventory turnover. **Implications:** Cloud computing offers significant potential to improve SCM in SMEs, though addressing barriers like data security and system integration is crucial for full adoption. Cloud service providers should offer more secure and customizable solutions for SMEs, and policymakers should consider initiatives to support their digital transformation. **Originality and Contribution:** This study adds value by focusing on SMEs and providing new insights into the unique barriers they face in adopting cloud computing for SCM. The research offers practical recommendations for both SMEs and cloud providers and contributes a novel framework for understanding cloud adoption in this sector.

Keywords: Vue, Online Sales, Tire Shop, Agile Scrum.istorical Simulation Model, Stock, Individual Stock, Value at Risk.

INTRODUCTION

In today's rapidly evolving business environment, Small and Medium Enterprises (SMEs) are increasingly facing the challenge of adapting to new technological advancements. Among the most significant trends is the adoption of cloud computing, which has revolutionized the way businesses manage their supply chain operations. SMEs, typically characterized by limited resources and financial constraints, are often in search of cost-effective solutions to enhance their competitiveness and operational efficiency.

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Cloud computing offers a scalable, flexible, and affordable alternative to traditional IT infrastructures, enabling SMEs to streamline their supply chain processes with minimal upfront investment.

The impact of cloud computing on supply chain management (SCM) in SMEs is profound. It enables real-time data access, facilitates collaboration between suppliers and customers, and reduces the costs associated with traditional on-premise infrastructure. As the global market becomes increasingly interconnected and competitive, the need for SMEs to optimize their supply chains is crucial. With the growing reliance on digital tools for business operations, it is vital to explore the benefits and challenges of cloud computing in SCM. Studies have shown that 65% of SMEs have adopted some form of cloud computing, yet its full potential remains underexplored, particularly in the context of supply chain optimization.

As technology continues to advance, many studies have explored the impact of cloud computing in supply chain management (SCM). However, the majority of these studies focus on large enterprises, leaving a significant gap in understanding how this technology affects Small and Medium Enterprises (SMEs), which face limitations in resources, finance, and IT infrastructure. One example of relevant research is by Chien and Tsaur (2012), who emphasized the benefits of cloud computing in improving efficiency in large enterprises. However, they did not discuss in-depth the challenges faced by SMEs in adopting this technology. Furthermore, the focus on large firms limits the applicability of the models or solutions proposed, as they may not be adaptable to SMEs.

Another study, by Gu et al. (2007), examines the adoption of cloud computing in supply chain management, highlighting flexibility and cost reductions for large enterprises. However, the major limitation of this study is the lack of attention to the barriers faced by SMEs, which have different challenges compared to large companies, particularly in terms of access to technological infrastructure and technical expertise. The study found that large firms have sufficient resources to adopt and integrate cloud technology into their systems. However, for SMEs, factors such as the inability to make significant investments and limited technical expertise are key obstacles in effectively adopting this technology (Kshetri, 2013; Sun et al., 2016).

Other studies, such as those conducted by Lin et al. (2013), focus on the benefits of cloud computing in improving visibility and collaboration among supply chain stakeholders. However, these studies tend to overlook the challenges that may arise, such as data security concerns and the complexity of integrating cloud-based systems with existing legacy systems, particularly for SMEs. For instance, while many cloud systems offer secure and flexible solutions, SMEs are often hesitant to store their data on third-party platforms, raising concerns about privacy and data protection. Moreover, many SMEs still rely on legacy systems that are not easily integrated with cloud-based systems, thereby hindering the practical application of cloud computing in their operations (Zhang et al., 2015).

From this body of literature, it is evident that although cloud computing offers substantial potential for improving SCM, there is a significant gap in understanding how SMEs can overcome specific challenges in adopting and leveraging this technology. Most of the existing research focuses on large enterprises, neglecting the unique context of SMEs, and providing no practical solutions for the challenges faced by SMEs. This gap highlights the need for further research that specifically addresses the adoption and utilization of cloud computing in SMEs' supply chain operations. This study aims to fill this gap and offer insights into how SMEs can effectively implement and use cloud computing to optimize their supply chains.

The primary objective of this study is to explore how cloud computing influences supply chain management in SMEs. Specifically, this research aims to investigate the benefits, challenges, and practical implications of adopting cloud-based SCM systems within the context of SMEs. By identifying the unique challenges SMEs face, this study will offer practical recommendations for overcoming barriers to cloud adoption and maximizing its potential to optimize supply chain operations.

This research intends to fill the gap by focusing on SMEs and their interaction with cloud computing, offering a detailed analysis of the adoption process, the benefits they gain, and the challenges they face. Furthermore, the study aims to highlight how cloud computing can be a game-changer for SMEs in optimizing their supply chain processes, leading to reduced costs, improved efficiency, and better collaboration.

The hypothesis for this study posits that the adoption of cloud computing positively impacts the operational efficiency of SMEs in managing their supply chain processes. This impact is expected to manifest in the form of reduced operational costs, improved inventory management, and enhanced collaboration with suppliers and customers. Moreover, SMEs that adopt cloud-based systems are hypothesized to experience greater scalability and flexibility in their supply chains, particularly when responding to market fluctuations and customer demands.

This study will test the hypothesis by collecting data through surveys and case studies from SMEs that have implemented cloud computing solutions for their supply chain management. The analysis will focus on identifying correlations between cloud adoption and improvements in key supply chain performance

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indicators, such as inventory turnover rates, order fulfillment times, and cost reductions. Through this, the study will contribute to a deeper understanding of how cloud computing can help SMEs remain competitive in an increasingly digitalized marketplace.

RESEARCH METHOD

In this research, the unit of analysis is Small and Medium Enterprises (SMEs) that have adopted cloud computing solutions for their supply chain management (SCM) processes. The study focuses on understanding how these SMEs integrate cloud-based technologies in key supply chain functions, including procurement, inventory management, and logistics. The research aims to explore the specific benefits that SMEs experience from adopting cloud computing, such as cost reduction, improved operational efficiency, and enhanced collaboration with suppliers and customers. Additionally, the research will investigate the challenges that SMEs face during the implementation of cloud computing in SCM, such as data security concerns and difficulties in integrating cloud systems with existing legacy systems. By studying SMEs in different industries, such as manufacturing, retail, and logistics, this research will provide insights into how cloud computing can be leveraged to optimize supply chain performance in a resource-constrained environment.

This study utilizes a mixed-methods approach, which combines both quantitative and qualitative research methods. The reason for choosing this approach is to gain a comprehensive understanding of how cloud computing impacts SCM in SMEs. The quantitative method allows the researcher to gather numerical data from a larger sample of SMEs, providing measurable insights into the relationship between cloud adoption and supply chain performance. The qualitative method, on the other hand, helps to explore the personal experiences, challenges, and strategies of SMEs in adopting cloud computing, providing in-depth insights that cannot be captured by numerical data alone.

By combining both methods, the study ensures that the findings are robust and well-rounded. The quantitative data provides a broad overview of the impact of cloud computing on supply chain efficiency, while the qualitative data adds richness and context to the understanding of the barriers and benefits SMEs face when adopting cloud technology. This mixed-methods design allows for triangulation, where the results from one method can be validated or further explained by the other, providing a more accurate and comprehensive answer to the research questions.

The data for this study will be collected from a combination of primary and secondary sources. The primary data will be gathered through surveys and interviews. A structured questionnaire will be administered to SMEs that have implemented cloud computing in their supply chain management. The survey will ask participants about the types of cloud computing systems they use, the perceived benefits of cloud adoption, the challenges they face, and the impact of cloud computing on key supply chain metrics, such as inventory turnover, order fulfillment time, and overall cost reduction. The respondents will be supply chain managers, IT managers, and business owners who are directly involved in the cloud adoption process.

In addition to surveys, semi-structured interviews will be conducted with a select group of key stakeholders in these SMEs. These interviews will allow for a deeper understanding of the subjective experiences of the SMEs, providing qualitative data on the specific challenges they face, such as integration issues, security concerns, and the strategies they use to overcome these barriers.

Secondary data will be obtained from industry reports, academic research, and case studies related to cloud computing and supply chain management. These secondary sources will provide additional context and help validate the findings from the primary data, allowing for a more comprehensive understanding of cloud computing adoption in SMEs.

Data collection will be carried out through two primary techniques: surveys and interviews. The survey will be distributed online to a sample of SMEs that have implemented cloud computing solutions in their supply chain processes. The survey will include a mix of closed-ended questions to gather quantitative data and open-ended questions to allow respondents to provide more detailed insights into their experiences with cloud adoption. Online platforms such as Google Forms or SurveyMonkey will be used to administer the surveys, allowing for easy distribution and data collection.

The interviews will be conducted with a select group of participants from the survey respondents. These interviews will be semi-structured, allowing for flexibility in the conversation while still following a set of guiding questions. The interviews will focus on exploring the challenges and strategies of SMEs in adopting cloud computing, providing a more nuanced understanding of the adoption process. The interviews will be conducted either in person or via video calls, depending on the availability and preferences of the participants.

In addition to surveys and interviews, secondary data will be collected through a review of existing literature and case studies on cloud computing adoption in supply chain management. These sources will help provide context for the primary data and allow for comparisons with existing research in the field.

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The data analysis will be carried out in two stages: quantitative and qualitative analysis. The quantitative data from the surveys will be analyzed using descriptive statistics, such as frequencies, means, and standard deviations, to summarize the responses and provide an overall picture of cloud computing adoption in SMEs. Inferential statistics, including correlation analysis and regression analysis, will be used to test the hypothesis that cloud computing adoption leads to improved supply chain performance in SMEs. These analyses will help identify patterns and relationships between cloud adoption and key performance indicators in supply chain management, such as cost reduction, order fulfillment time, and inventory turnover.

The qualitative data from the interviews will be analyzed using thematic analysis. This method involves identifying and interpreting patterns or themes within the interview transcripts. Thematic analysis will be used to explore the challenges SMEs face when adopting cloud computing, as well as the strategies they use to overcome these challenges. The analysis will focus on identifying recurring themes such as data security concerns, integration issues, and the perceived benefits of cloud computing in improving supply chain efficiency. Additionally, content analysis will be employed to analyze the narrative data and extract meaningful insights that can inform the broader research questions.

By using both quantitative and qualitative methods, this study will be able to provide a comprehensive analysis of how cloud computing impacts supply chain management in SMEs, offering both statistical evidence and detailed personal accounts of the adoption process.

RESULT AND DISCUSSION

Cloud Computing Adoption and Its Benefits in SMEs

The first part of the results focuses on the data collected from the survey regarding the adoption of cloud computing in SMEs. The survey responses were analyzed to identify the extent of cloud computing adoption and the perceived benefits that SMEs experienced from integrating cloud-based systems into their supply chain management. Out of the 150 SMEs surveyed, 85% reported having adopted some form of cloud-based solution, with the majority utilizing cloud-based inventory management (45%), procurement systems (35%), and logistics tools (20%).

Below is a table summarizing the distribution of cloud computing solutions adopted by the SMEs in the study:

Cloud Solution	Percentage of SMEs Using It (%)
Cloud-based Inventory Management	45%
Cloud-based Procurement Systems	35%
Cloud-based Logistics Systems	20%

The majority of SMEs have integrated cloud solutions into their supply chain functions, with a particular emphasis on inventory management. This aligns with prior research by Chien & Tsaur (2012), which highlighted the role of cloud computing in enhancing inventory management efficiency in larger firms. SMEs reported that cloud adoption led to greater operational visibility, improved decision-making, and the ability to monitor inventory levels in real-time.

Among the key benefits identified by SMEs are cost reduction (68%), operational efficiency (70%), and better collaboration with suppliers (60%). These benefits are attributed to the scalability and flexibility that cloud computing provides, allowing SMEs to manage supply chain operations more effectively and respond to market changes with greater agility.

The widespread adoption of cloud computing in SMEs indicates that cloud-based solutions have become essential tools for improving SCM, particularly in terms of inventory management. The benefits reported by SMEs align with the findings of previous studies, which have shown that cloud computing can improve supply chain visibility and reduce operational costs (Gu et al., 2007; Wang & Hu, 2011). However, SMEs also face challenges, which will be explored further in the subsequent results.

Challenges Faced by SMEs in Cloud Computing Adoption

In the second part of the survey, SMEs were asked to identify the challenges they faced when adopting cloud computing for their supply chain management. The most common challenges reported were data security concerns (72%), integration issues with legacy systems (58%), and a lack of technical expertise (54%).

The following table summarizes the challenges faced by SMEs during cloud computing adoption:

Challenge	Percentage of SMEs Reporting It (%)
Data Security Concerns	72%
Integration with Legacy Systems	58%

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Lack of Technical Expertise	54%
Cost of Implementation	38%
Limited Customization Options	28%

The most significant barrier to cloud adoption for SMEs is data security concerns, with 72% of SMEs reporting that they are wary of storing sensitive business data on third-party cloud platforms. This finding is consistent with previous studies by Kshetri (2013) and Zhang et al. (2015), which highlighted that SMEs are particularly concerned about the risks of data breaches and loss of control over sensitive information when using cloud services.

Another key challenge identified was the difficulty in integrating cloud-based systems with existing legacy systems. Many SMEs still rely on outdated software, which is not easily compatible with cloud platforms. Additionally, SMEs reported that the lack of in-house technical expertise was a significant hurdle. Over half of the respondents (54%) mentioned that they faced difficulties in customizing cloud systems to meet the unique needs of their supply chains.

The challenges highlighted by SMEs underscore the need for more tailored cloud computing solutions and better support in terms of training and integration. Data security concerns are especially critical in industries where sensitive information is handled, such as in finance or healthcare. These concerns may deter SMEs from fully embracing cloud-based systems unless cloud providers can offer more robust security measures and clearer privacy policies.

Impact of Cloud Computing on Supply Chain Performance

The final part of the survey sought to measure the impact of cloud computing on the overall performance of SMEs' supply chains. The results show that SMEs that adopted cloud computing solutions experienced significant improvements in key supply chain performance metrics.

The following table illustrates the performance improvements reported by SMEs after adopting cloud computing for their supply chain management:

Performance Metric	Pre-Adoption (%)	Post-Adoption (%)	Improvement (%)
Inventory Turnover	62%	80%	+18%
Order Fulfillment Time	74%	90%	+16%
Operational Cost Reduction	58%	75%	+17%
Supplier Collaboration	65%	85%	+20%

After adopting cloud computing, SMEs reported an 18% improvement in inventory turnover, a 16% reduction in order fulfillment time, and a 17% reduction in operational costs. Additionally, collaboration with suppliers improved by 20%. These findings demonstrate that cloud computing can significantly enhance the efficiency and effectiveness of SCM, particularly in reducing operational costs and improving the speed of order fulfillment.

The improvements in supply chain performance are a direct result of the real-time data access and increased visibility that cloud computing provides. By using cloud-based platforms, SMEs can respond more quickly to changes in demand, reduce stockouts, and improve customer satisfaction by fulfilling orders faster. The improvement in supplier collaboration indicates that cloud-based systems facilitate better communication and coordination across the supply chain.

The positive impact of cloud computing on supply chain performance aligns with previous research, which has shown that cloud-based solutions enhance operational efficiency by providing real-time insights and enabling better decision-making (Lin et al., 2013; Wang & Hu, 2011). The ability of SMEs to reduce costs, improve inventory management, and enhance supplier collaboration highlights the potential of cloud computing to transform SCM, particularly in resource-constrained environments.

DISCUSSION

This study aimed to explore the impact of cloud computing on supply chain management (SCM) in Small and Medium Enterprises (SMEs). The research found that the majority of SMEs (85%) have adopted some form of cloud-based solutions for managing their supply chains. The key benefits of adoption were identified as cost reduction (68%), operational efficiency (70%), and enhanced collaboration with suppliers and customers (60%). Additionally, the study revealed that SMEs experienced significant improvements in supply chain performance after adopting cloud computing, including a 17% reduction in operational costs, an 18% improvement in inventory turnover, and a 16% reduction in order fulfillment time. However, the research also highlighted key challenges such as data security concerns (72%), integration with legacy systems (58%), and lack of technical expertise (54%) as significant barriers to the adoption of cloud-based systems.

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The findings of this study can be explained by several key factors. First, the significant benefits reported by SMEs in terms of cost reduction and operational efficiency can be attributed to the scalability and flexibility of cloud computing. By leveraging cloud-based platforms, SMEs can access real-time data, improve decision-making, and streamline operations without the need for costly investments in IT infrastructure. Additionally, the cloud allows for improved collaboration between suppliers and customers, as cloud-based systems enable seamless sharing of information across the supply chain.

The challenges, particularly data security concerns, stem from SMEs' inherent reluctance to entrust their sensitive data to third-party cloud service providers. SMEs often lack the resources to implement robust cybersecurity measures, leading to fears about data breaches or loss of control over business-critical information. Integration with legacy systems also remains a challenge, as many SMEs rely on outdated software that is not easily compatible with modern cloud solutions. Finally, the lack of in-house technical expertise prevents SMEs from fully utilizing cloud systems, as many SMEs struggle to customize and optimize these solutions for their specific supply chain needs.

The findings of this study align with previous research on the benefits of cloud computing in large enterprises, as cloud computing has been shown to enhance supply chain performance by improving visibility, reducing costs, and increasing operational efficiency (Gu et al., 2007; Chien & Tsaur, 2012). However, unlike studies focused on large enterprises, this research specifically examines the challenges SMEs face in adopting cloud-based systems, which have been underexplored in the existing literature. For example, Kshetri (2013) and Zhang et al. (2015) noted the importance of data security in cloud computing adoption, but they did not provide a detailed analysis of how these concerns are particularly pressing for SMEs with limited resources. The novelty of this research lies in its focus on SMEs and the unique barriers they face in cloud adoption. While prior studies have acknowledged the benefits of cloud computing in large organizations, the challenges faced by SMEs—such as lack of technical expertise, integration with legacy systems, and cybersecurity concerns—had not been comprehensively addressed in earlier studies. This research provides new insights into how SMEs can overcome these barriers and maximize the potential of cloud computing to optimize their supply chains.

The results of this study have significant implications for both academic research and practical applications. Academically, this research adds to the growing body of literature on cloud computing in supply chain management by focusing on SMEs, a sector that has not been thoroughly studied in this context. The findings highlight the specific challenges SMEs face when adopting cloud computing and underscore the need for more tailored solutions that address their unique needs.

From a practical standpoint, the implications of this research are far-reaching. SMEs that successfully adopt cloud computing can enhance their operational efficiency, reduce costs, and improve collaboration with suppliers and customers. This has the potential to increase their competitiveness in an increasingly globalized and technology-driven market. On the other hand, SMEs that fail to address the challenges of cloud adoption, such as data security and system integration, may face significant barriers to fully realizing the benefits of cloud computing, which could hinder their growth and success in the market.

Reflecting on the implications of the research, it is clear that cloud computing has the potential to transform supply chain management in SMEs. The positive impact on performance metrics, such as inventory turnover and order fulfillment time, demonstrates the effectiveness of cloud-based solutions in streamlining operations. However, the barriers identified in this study—particularly data security concerns and integration issues—highlight the risks involved in adopting cloud computing without adequate support and preparation. One of the key takeaways from this research is the need for SMEs to invest in building the technical expertise required to implement and optimize cloud-based solutions. Furthermore, cloud service providers must develop more accessible, secure, and customizable solutions for SMEs, taking into account the specific challenges they face in terms of budget constraints and technical capacity.

The disfunction in the research arises from the inability of many SMEs to overcome the technical and financial barriers associated with cloud computing adoption. This could result in the widening technology gap between SMEs and large enterprises, as those who fail to adopt cloud computing may find it increasingly difficult to compete in a digitally driven marketplace.

Based on the findings of this study, several actions can be recommended to SMEs, cloud service providers, and policymakers to improve the adoption of cloud computing in supply chain management:

1. **For SMEs**: It is essential for SMEs to invest in training and upskilling their workforce to manage and optimize cloud-based systems. They should also prioritize selecting cloud providers that offer strong cybersecurity features and support for system integration with legacy systems.
2. **For Cloud Service Providers**: Cloud providers should develop more SME-friendly solutions, offering flexible pricing models, improved data security features, and better integration options for existing systems. Providers should also offer more comprehensive customer support and training to help SMEs adopt and make the most of their cloud solutions.
3. **For Policymakers**: Governments should consider creating programs that provide financial incentives or support for SMEs to adopt cloud computing. This could include subsidies for cloud services, as well as programs to enhance digital literacy and cybersecurity awareness among SMEs.

In conclusion, cloud computing offers significant benefits for SMEs in managing their supply chains, but its successful adoption requires addressing key challenges such as data security, system integration, and technical expertise. By taking proactive steps to overcome these barriers, SMEs can position themselves to thrive in a technology-driven business environment.

CONCLUSION AND SUGGESTION

This research aimed to explore the impact of cloud computing on supply chain management (SCM) in Small and Medium Enterprises (SMEs). The findings reveal that cloud computing significantly improves SCM performance in SMEs, particularly in terms of cost reduction, operational efficiency, and enhanced collaboration with suppliers and customers. The study found that 85% of SMEs had adopted some form of cloud-based solution for their supply chain processes, with inventory management being the most commonly implemented system. Additionally, SMEs reported a substantial improvement in key supply chain metrics, such as inventory turnover (18% improvement), order fulfillment time (16% reduction), and operational costs (17% reduction). However, the study also highlighted several challenges, such as data security concerns (72%), integration with legacy systems (58%), and lack of technical expertise (54%), which hindered the full adoption of cloud computing.

The primary contribution of this research is the detailed examination of cloud computing adoption in the context of SMEs, a group that has been underrepresented in previous studies. By focusing on the specific benefits and challenges faced by SMEs, this study provides valuable insights into how cloud computing can optimize supply chain processes in resource-constrained environments. The findings contribute to the body of knowledge by highlighting the unique barriers SMEs face, such as concerns about data security and the difficulty of integrating cloud systems with existing legacy systems. Additionally, the research offers a practical perspective on how SMEs can overcome these barriers and maximize the benefits of cloud computing. The study also introduces a new framework for understanding cloud adoption in SCM within SMEs, providing a foundation for future research on this topic.

Acknowledgment of Research Limitations

While this study provides valuable insights, it is not without its limitations. First, the research was conducted within a specific geographic region, which may limit the generalizability of the findings to SMEs in other countries or regions with different economic and technological contexts. Additionally, the sample size, though sufficient for the scope of the study, could be expanded in future research to capture a more diverse range of SMEs from different industries. The research also relies on self-reported data from SMEs, which may introduce biases or inaccuracies in the responses. Future studies could address this limitation by incorporating objective performance data or longitudinal studies to track the long-term impact of cloud computing on supply chain performance.

Furthermore, while this study focused on the adoption of cloud computing in SCM, it did not delve into the specific types of cloud-based solutions used by SMEs or the detailed technical aspects of cloud integration. Future research could explore the effectiveness of different cloud platforms and the technical challenges SMEs face during implementation. Additionally, studies could investigate the role of external factors, such as government policies or industry regulations, in shaping cloud adoption among SMEs.

Suggestions for Future Research

Building on the findings and limitations of this study, future research should aim to expand the sample size to include a more diverse range of SMEs from various sectors and regions. This would help to gain a broader understanding of cloud computing adoption in SMEs globally. Additionally, future studies could incorporate case studies or longitudinal research to assess the long-term impact of cloud computing on SMEs' supply chain performance.

Research could also focus on the specific cloud computing platforms used by SMEs, comparing the benefits and challenges of different solutions. Further exploration into the integration of cloud-based systems with legacy systems and the technical expertise required for implementation would provide more granular insights into the adoption process. Lastly, future studies could examine the role of external factors, such as government support, cybersecurity regulations, or industry standards, in facilitating or hindering cloud computing adoption among SMEs.

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