Inventory Management Practices and Business Performance of Convenience Stores

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Abstract
Sales for convenience stores in Malaysia decreased by 13.8% in the second quarter of 2024, indicating a need to improve the business performance of these stores. Prior research has suggested that inventory management practices play a critical role in enhancing performance. Therefore, this study aims to identify key inventory management practices for convenience stores (RO1), and assess the relationship between inventory management practices and business performance (RO2). Based on a review of relevant literature, this study focuses on four key practices: Vendor Managed Inventory (VMI) practices, inventory stock taking practices, strategic supplier management practices and Lean practices. This quantitative research targets convenience stores located in Shah Alam, with a population size of 45. Using Krejcie and Morgan's sampling table, 40 samples were selected through a combination of stratified and random sampling. A structured questionnaire was distributed, and 40 responses were collected. Descriptive analysis identified strategic supplier management practices as the most important inventory management practice as perceived by the convenience stores. Pearson correlation analysis revealed that all four inventory management practices were significantly correlated with the business performance of convenience stores in Shah Alam, with Vendor Managed Inventory (VMI) practices yielded the highest correlation coefficient with business performance. This study offers practical implications for convenience store operators. The findings may serve as a valuable reference to enhance business performance and identify areas requiring improvement.
Keywords: Inventory Management, Vendor Management, Inventory System, Lean Practices, Inventory Stock Taking and Strategic Supplier Management Practices

Introduction
The number of convenience stores in Malaysia grew at a Compound Annual Growth Rate (CAGR) of 6% between 2016 and 2022. However, according to a report by The Edge), overall

retail sales growth in Malaysia slowed to 0.6% in the second quarter of 2024, with convenience stores experiencing the sharpest decline of 13.8%.

Convenience stores are small retail outlets that stock a variety of everyday items such as convenience foods, groceries, beverages, tobacco products, lottery tickets, over-the-counter medications, toiletries, newspapers, and magazines (Hariyanto et. al., 2017). These stores often face inefficient supply chain issues, such as inventory shortages, which lead to poor business performance and the loss of potential customers (Stolze et. al., 2021).

Effective inventory management has been consistently linked to improved business performance (Rashid and Rasheed, 2023). Practices such as vendor-managed inventory systems, regular stock-taking, strategic supplier management, and lean inventory practices have been widely recognized as key to business success (Shajema, 2018). Therefore, this research aims to:

RO1: Identify the important inventory management practices for convenience stores in Setia Alam.
RO2: Assess the relationship between inventory management practices and the business performance of convenience stores.

Business Performance
According to Sopha, Jie and Himadhani (2021), business performance encompasses, but is not limited to, sales growth rate, productivity, and profitability. The sales growth rate is a ratio used to calculate the rate at which sales change over a specific period. Analyzing historical growth rates is commonly used to forecast future growth. Productivity refers to the measurement of how effectively and efficiently resources are utilized to produce high-quality products and services that meet customer and societal needs over the long term (Rombe, 2018). It is considered a key indicator of organizational competency (Abdallah and Al-Ghwayeen, 2019). Productivity can be measured using four main components: labor productivity, capital productivity, energy productivity, and material productivity.

In this research, business performance of convenience stores is examined through the dimensions of sales growth, productivity, and profitability, and is assessed using the performance attributes proposed by Shajema (2018).

Previous Study on Inventory Management Practices
Table 1 summarizes the findings from the literature review regarding common inventory management practices proposed by previous researchers. As shown in Table 1, the common inventory management practices identified across these studies include Vendor Managed Inventory (VMI) systems, inventory stocktaking, strategic supplier management practices, and lean practices.

Table 1
Previous Study on Inventory Management Practices

Empirical study	Inventory Management Practices			
	Vendor Managed Inventory (VMI) practices	Inventory stock taking practices	Strategic Supplier Management Practices	Lean practices
Beheshti & Clelland, 2020	ü			
Garcia-Buendia et al., 2023			ü	
Mohammadzadeh and Mirzazadeh, 2018	ü			
Mutambik, 2024			ü	
Ramirez-Mitma et. al., 2019				ü
Sahoo (2022)				ü
Saini and Singh (2020)				ü
Stolze et. al. 2021	ü			
Tasdemir and Hiziroglu (2019),		ü		
Teerasoponpong & Sopodang, 2022		ü		
Ufua et. al. (2022)		ü		
Zhang & Zhang, 2022			ü	

Vendor Managed Inventory (VMI) Practices
Vendor Managed Inventory (VMI), often referred to as supplier-managed stocks or continuous supply, is a cooperative strategy in which suppliers replenish a business's inventory using data collected through Point of Sale (POS) systems (Kadiyala, Özer, & Bensoussan, 2019). VMI enhances customer satisfaction by improving product availability, reducing ordering and storage costs, minimizing stockouts, and enabling better coordination between supply and demand (Beheshti & Clelland, 2020). It facilitates more efficient restocking plans, mitigates bullwhip effects, and strengthens buyer–supplier relationships.

Effective implementation of VMI requires trust, reliable information-sharing systems, ICT integration, and accurate sales forecasting (Radzuan et al., 2014). By giving vendors control over inventory levels and replenishment decisions, VMI reduces overstocking, ensures timely restocking, and improves service quality (Mohammadzadeh and Mirzazadeh, 2018). The success of VMI hinges on high demand visibility, effective communication, and shared objectives between partners, supported by investments in modern inventory and order management technologies (Stolze et. al. 2021). Based on this, the following hypothesis is proposed:
H1: There is a significant relationship between VMI practices and convenience stores' business performance.

Inventory Stock Taking Practices
Stocktaking, also referred to as inventory checking, is the procedure of physically verifying, recording, and comparing the quantity and condition of products in inventory against database records. This process ensures accuracy in inventory management, aids in tracking stock levels, and helps identify discrepancies. It supports informed decision-making in

purchasing, sales, and operational planning. Research has shown that accurate stocktaking improves productivity, enhances financial outcomes, and helps prevent stock shortages, making it a critical component of business success (Teerasoponpong & Sopodang, 2022)

Effective inventory management depends significantly on the reliability of inventory recording systems, whether digital or manual. Ufua et. al. (2022) emphasizes the need to select appropriate inventory recording systems based on cost-effectiveness, while Tasdemir and Hiziroglu (2019), highlights the importance of aligning systems with the specific characteristics and costs of various inventory types. Modern computerized systems have increasingly replaced traditional manual methods, offering greater efficiency in storing, updating, and retrieving stock information.

Accurate inventory records are essential to avoid both stockouts and overstocking, which can adversely affect operational efficiency and customer satisfaction (Ufua et. al., 2022). Best practices in stocktaking include the use of automated systems, barcode allocation for easier tracking, daily reconciliation of stock discrepancies, verification of issue requests before releasing stock, and securing supply documentation. These practices contribute to improved inventory accuracy, streamlined processes, and enhanced overall store and business performance. Based on this, the following hypothesis is proposed:
H2: There is a significant relationship between Inventory Stock Taking practices and convenience stores' business performance.

Strategic Supplier Management Practices
A supplier management framework is a structured approach that comprises defined processes, rules, and procedures for effectively managing supplier relationships. It encompasses key activities such as supplier selection, contract negotiation, performance monitoring, and the maintenance of long-term partnerships. Strategic collaboration with suppliers plays a vital role in optimizing supply chain integration and aligning operational processes to improve efficiency, performance, and product quality (Garcia-Buendia et al., 2023). Establishing transparent communication channels, such as regular feedback sessions and real-time information-sharing systems, supports continuous improvement by enabling suppliers to provide timely updates on orders and delivery schedules, thereby enhancing lead-time accuracy.

Effective supply chain management has been shown to positively influence financial performance, increase market share, improve return on investment, and strengthen competitive positioning. Building long-term strategic partnerships with suppliers promotes innovation, ensures consistent quality, and increases responsiveness to market changes (Mutambik, 2024). Moreover, integrating suppliers into operational policies and inventory management processes fosters seamless collaboration and alignment (Zhang & Zhang, 2022).

Best practices in supplier management include prequalifying suppliers, developing close partnerships, deploying advanced communication technologies, integrating suppliers into inventory and procurement policies, offering technical training, conducting regular quality assessments, providing financial assistance when feasible, and continuously evaluating supplier performance (Chileshe & Phiri, 2022). These strategies not only reinforce supplier

relationships and improve supply chain efficiency but also create a sustainable competitive advantage. Based on this, the following hypothesis is proposed:

H3: There is a significant relationship between Strategic Supplier Management practices and convenience stores' business performance.

Lean Practices

Lean supply chain management is a strategic approach aimed at improving quality, reducing costs, and enhancing customer satisfaction by eliminating waste and maximizing value across the supply chain. It emphasizes operational efficiency, rigorous quality control, streamlined supply flows, and minimal inventory levels. By focusing on continuous improvement and the elimination of non-value-added activities, businesses can achieve operational excellence and maintain a competitive edge in today's demanding market environment. Lean principles prioritize consistency, predictability, and the smooth flow of products to effectively meet customer expectations (Ramirez-Mitma et. al., 2019).

Key components of lean supply chain strategies include tools and techniques such as value stream mapping, process standardization, waste elimination, and workplace organization. Sahoo (2022) highlight that lean practices contribute to cost reduction and operational efficiency, while Tasdemir and Hiziroglu (2019) emphasize the role of internet-enabled technologies in enhancing collaboration with suppliers and service providers. Furthermore, Saini and Singh (2020) demonstrate that lean supply chain practices lead to increased profitability and improved customer satisfaction.

The effective implementation of lean practices requires proactive waste identification, accurate demand forecasting, continuous monitoring for inefficiencies, and seamless collaboration among supply chain partners. By embedding lean principles into operational processes, organizations can enhance customer service, optimize resource utilization, improve financial performance, and streamline overall operations. Based on this, the following hypothesis is proposed:

H4: There is a significant relationship between Lean practices and convenience stores' business performance.

Research Methodology

Prior research on inventory management has emphasized the importance of geographical factors in the selection of research populations. In the context of inventory management for convenience stores, it is essential that the population shares a common logistical infrastructure and supply chain setting. Without this shared context, generalizing research findings across differing geographical areas may result in misleading conclusions due to variations in logistics capabilities, supplier accessibility, and distribution efficiency. Therefore, the population for this study is focused on 45 convenience stores located across seven residential areas in central Malaysia, specifically in Shah Alam, Selangor. Based on Krejcie and Morgan's (1970) sampling table, the targeted sample size is 40. The samples are selected using a stratified sampling method, as detailed in Table 2.

Table 2
Stratified Sampling Plan

Residential Area	Population (Number of convenience stores)	Targeted sample size
Setia Prima	10	9
Setia Indah	5	4
Setia Murni	6	5
Setia Taipan	10	9
Setia Dagang	6	5
Eco Ardence	4	4
Bukit Raja	4	4
Total	45	40

This research adopts a quantitative approach. The questionnaire employed in this study is adapted from the work of Shajema, I. (2018) and is structured into three sections. Part A gathers demographic information, including phone number, age, gender, job position, work experience in convenience stores, and store location. Parts B and C address the independent and dependent variables, respectively. Respondents indicate their level of agreement using a five-point Likert scale, where: 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree.

To address Research Objective 1 (RO1), which investigates the importance of inventory management practices for convenience stores, the mean scores from Section B of the questionnaire are calculated to assess the perceived importance of these practices among store managers in Shah Alam. For Research Objective 2 (RO2), which explores the relationship between inventory management practices and business performance, Pearson Correlation analysis is conducted using data from Sections B and C of the questionnaire.

Normality and Reliability Test
A total of 40 respondents completed the questionnaires. All responses were screened, and no missing values were identified among the returned questionnaires. The results of the normality and reliability tests are presented in Table 3. Skewness values for all variables ranged from -0.565 to -0.387, while kurtosis values ranged from -0.858 to -0.627, indicating that the data are normally distributed. The Cronbach's Alpha coefficient for the instrument is 0.911, exceeding the minimum acceptable threshold of 0.70. Therefore, it can be concluded that the data are both normally distributed and reliable.

Table 3
Normality and Reliability Test Result

Inventory Management Practices	Normality Test		Reliability Test	
	Skewness	Kurtosis	Cronbach	No. Items
Vendor Managed Inventory (VMI) practices	-0.387	-0.788	0.911	10
Inventory stock taking practices	-0.453	-0.754	0.778	10
Strategic Supplier Management Practices	-0.565	-0.627	0.852	8
Lean Practices	-0.392	-0.858	0.911	8
Business Performance	0.491	0.696	0.843	10

Addressing RO1: The Important Inventory Management Practices
To address Research Objective 1 (RO1), which aims to identify the important inventory management practices for convenience stores in Shah Alam, the mean score for each inventory management practice was calculated and ranked accordingly, as summarized in Table 4.

Table 4
Descriptive Analysis Result

Ranking	Items	Mean (μ)	Interpretation[1]
1	Strategic Supplier Management Practices	3.5313	Important
2	Lean Practices	3.4594	Important
3	Vendor Managed Inventory (VMI) practices	3.4375	Important
4	Inventory stock taking practices	3.4050	Important

[1] $1.0 \leq \mu < 1.8$: Very Unimportant; $1.8 \leq \mu < 2.6$: Not Important; $2.6 \leq \mu < 3.4$: Moderate Important;
   $3.4 \leq \mu < 4.2$: Important; $4.2 \leq \mu < 5.0$: Very Important

Based on the findings presented in Table 4, respondents perceived all four inventory management practices as important. Strategic Supplier Management Practices were ranked highest, with a mean score of 3.5313. The remaining practices also received relatively high mean scores, ranging from 3.4050 for Inventory Stock Taking Practices to 3.4594 for Lean Practices. These results are consistent with the findings of Shajema (2018), who highlighted that all four practices are key drivers for the success of an effective inventory management system.

Analysis result of Table 4 also indicate that respondents perceive Strategic Supplier Management Practices as the most important inventory management practice for convenience stores in Shah Alam. This finding aligns with previous research by Koh et. al (2007), which emphasized the critical role of strategic supplier management in ensuring the survival of retail chain stores. Additionally, the results support the study by Mutambik, (2024), who highlighted that strategic supplier management practices are essential for driving efficiency, performance, and quality throughout the supply chain.

Addressing RO2: The Relationship between Inventory Management Practices and the Business Performance
To address Research Objective 2 (RO2), which is to assess the relationship between inventory management practices and the business performance of convenience stores, the Pearson

correlation test was conducted using SPSS to examine the relationship between the mean scores of the independent and dependent variables. The results of the analysis are presented in Table 5.

Table 5
Pearson Correlation Analysis Result

Hypo	Items	Correlation with Business Performance			
		p-Value	Hypo test	Coefficient (r)	Relationship
H1	Vendor Managed Inventory (VMI) practices	0.00	Significant	0.732	High
H2	Inventory stock taking practices	0.00	Significant	0.707	High
H3	Strategic Supplier Management Practices	0.00	Significant	0.720	High
H4	Lean Practices	0.00	Significant	0.698	Medium

As shown in Table 5, the p-values for all hypothesis tests are less than 0.05, indicating that there are statistically significant relationships between all four inventory management practices (i.e. Vendor Managed Inventory (VMI) practices, Inventory stock taking practices, Strategic Supplier Management Practices and Lean Practices) and the business performance of convenience stores. Therefore, all the hypotheses are supported. The correlation coefficients indicate that all relationships are positive. Among the four practices, VMI practices exhibit the strongest correlation with business performance (r = 0.732), followed by Strategic Supplier Management practices (r = 0.720) and Inventory Stock Taking practices (r = 0.707). Meanwhile, Lean practices show a moderate positive relationship with business performance, with a correlation coefficient of 0.698.

The findings from this research align with prior empirical studies by Kadiyala, et. al. (2019), Garcia-Buendia et al., (2023), and Tasdemir and Hiziroglu (2019). Kadiyala et al. (2019) highlighted the effectiveness of Vendor Managed Inventory (VMI) practices in enhancing business performance by improving product availability, reducing ordering and storage costs, minimizing stockouts, and enabling better coordination between supply and demand. Similarly, Garcia-Buendia et al., (2023) found that strategic supplier management positively influences financial performance, increases market share, improves return on investment, and strengthens competitive positioning. In addition, Tasdemir and Hiziroglu (2019) emphasized that proper inventory stock-taking practices lead to accurate inventory records, which are critical for avoiding both stockouts and overstocking conditions that can negatively impact business performance.

Implications and Conclusion
The findings from Research Objective 1 (RO1) carry important practical implications. The nature of the convenience store business heavily depends on the services and support provided by suppliers, including item pricing, inventory held and reserved by suppliers, logistics services, and after-sales support. The results of RO1 suggest that convenience store owners in Shah Alam consider Strategic Supplier Management Practices, i.e. a structured approach consisting of defined processes, rules, and procedures for effectively managing supplier relationships to be essential for the operation and overall success of their businesses.

The analysis of Research Objective 1 (RO1) indicates that Strategic Supplier Management Practices are perceived by respondents as the most important inventory management practice. However, the findings for Research Objective 2 (RO2) suggest otherwise. The Pearson correlation analysis reveals that it is not Strategic Supplier Management, but rather Vendor Managed Inventory (VMI) practices that demonstrate the strongest correlation with the business performance of convenience stores. This leads to an important practical implication: convenience store owners should place greater emphasis on VMI practices, which involve high demand visibility, effective communication, and shared objectives between store owners and suppliers. These practices should be supported by investments in modern inventory and order management technologies to enhance business performance.

While Lean practices have been widely acknowledged by prior researchers as important inventory management tools that are strongly correlated with business performance, this study found that Lean practices are perceived by convenience store owners as the least important among the four practices examined. Furthermore, they only show a moderate correlation with business performance. This finding highlights a gap in practice and suggests a need for future research to explore how Lean practices can be effectively implemented in the context of convenience stores.

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