

Report On

The Impact of Lead Time and Requisition Quantity on
Delivery Performance for Fixed Assets and Recurring Items

By

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An internship report submitted to the BRAC Business School in partial fulfillment of the
requirements for the degree of
Bachelor of Business Administration

BRAC Business School
BRAC University
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Declaration

It is hereby declared that

1. The internship report submitted is my own original work while completing degree at BRAC University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Letter of Transmittal

Dr. Md. Hasan Maksud Chowdhury

Assistant Professor,

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Kha 224 Pragati Sarani, Merul Badda, Dhaka 1212.

Subject: Internship report on “The Impact of Lead Time and Requisition Quantity on Delivery Performance for Fixed Assets and Recurring Items”

Dear Sir,

I am presenting here my internship report titled “The Impact of Lead Time and Requisition Quantity on Delivery Performance for Fixed Assets and Recurring Items”. It summarizes the key learnings and findings during my internship experience.

This report was prepared with your three months of guidance, and it reflects both hands-on experience and analytical thought process skill developed during my internship period. I have given my best to finish the report with the accurate and significant data. I did it so in an as significant, compact, and comprehensive manner as possible. I trust that the report will meet the standards expected.

Sincerely yours,



MD. Rashad Yaqub Khan

21204173

BRAC Business School

BRAC University

Date: September 27, 2025

Non-Disclosure Agreement

The agreement is made and entered between Aarong and me, a student of BRAC University, that my paper titled “*The Impact of Lead Time and Requisition Quantity on Delivery Performance for Fixed Assets and Recurring Items*” will not be published or disclosed elsewhere except for academic purposes such as evaluation and presentation. In this report, I have used only those pieces of information that were officially released or authorized by my supervisors at the organization.

Name of the Company: Aarong

Supervisor Name: M. Mehedi Hassan

Position: Deputy Manager

Department: Procurement

Address: Aarong Centre 346, Tejgaon Industrial Area, Dhaka-1208

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Address: Kha 224 Pragati Sarani, Merul Badda, Dhaka 1212.

Description of the report: “*The Impact of Lead Time and Requisition Quantity on Delivery Performance for Fixed Assets and Recurring Items*”

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This report would not have been possible without the guidance and support of all the individuals mentioned above.

Executive Summary

This study investigates how lead time and requisition quantity affect delivery performance for fixed assets and recurring items at Aarong using data from June–August 2024 and 2025. Through chi square test, the Quantitative analyses of the report were done. The results, most of the time were not significant. There was no significant impact on delivery performance in 2024 but became significant in 2025. When it was significant, the effect was very weak, explaining the relationships were not meaningful. The results explained the need for differentiated procurement strategies, focused on lead time, requisition quantity and by item type. Limitations were simplified categorization of continuous variables, minimal ERP access, and lack of generalizability. Overall, the study highlights the importance of dynamic, data-driven procurement strategies and suggests further research with complete data, additional variables, and longitudinal analysis to guide more robust supply chain management decisions.

Keywords: Lead time; Requisition quantity; Delivery performance; Fixed Assets; Recurring items; Procurement strategies; ERP

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List of Acronyms

CS	Comparative Statement
ERP	Enterprise Resource Planning
AAF	Ayesha Abed Foundation
HR	Human Resources
HRP	Human Resource Planning
PMS	Performance Management System
STP	Segmentation
CRM	Customer Relationship Management
POS	Point of Sale
KPI	Key Performance Indicator
SLA	Service Level Agreement
SKU	Stock Keeping Unit
PR	Purchase Requisition
PO	Purchase Order
GRN	Goods Received Note
VMI	Vendor-Managed Inventory
IFRS	International Financial Reporting Standards
EVA	Economic Value Added
CAGR	Compound Annual Growth Rate
ROA	Return on Assets
ROE	Return on Equity
BDT	Bangladeshi Taka
SSS	Single Source Selection

CHAPTER 1

Overview Of Internship

1.1 Student Information

Name	MD. Rashad Yaquub Khan
ID	21204173
Program	Bachelor of Business Administration (BBA)
Major/Specialization	Operations and Supply Chain Management
Minor	Computer Information Management

1.2 Internship Information

1.2.1 Internship Details

Period	18 th June 2025 to 18 th September 2025 (3 months)
Company Name	Aarong
Department	Procurement
Address	Aarong Centre, 346, Tejgaon Industrial Area, Dhaka-1208.

1.2.2 Internship Supervisor's Information

Name	M. Mehedi Hassan
Position	Deputy Manager, Procurement.

1.2.3 Job Description/Duties/Responsibilities

I worked as a procurement intern at Aarong under their Internship Program. The role gave me a close look at how procurement works inside the company. I got to observe, assist, and sometimes handle small parts of the process myself. My main tasks were:

- Learning the full procurement process and guidelines.
- Preparing Comparative Statements (CS).
- Designing layouts for comparative statements.
- Assisting in market research and evaluation.

1.3 Internship Outcomes

1.3.1 Student's Contribution to the Company

Layout Suggestions for CS to Integrate into ERP:

- Collected input from staff and suggested improvements for the Comparative Statement layout in the ERP system.
- Focused on making the design simpler to use, with better visibility of workflows.

Requisition Flowchart for Newcomers:

- Created a requisition flowchart to simplify the procurement process that will help in the learning period for newcomers.
- The flowchart showed the step-by-step requisition approval process, making it easy for new employees to understand the sequence of actions, starting from requisition to final delivery and closing the file.

- Made sure that the flowchart was visually clear, attractive and included decision points. For example, supplier selection, who to take approval from, and budgeting constraints. All this eased the onboarding process for new staff and enhanced their learning curve.

Assisting Operation Officers with Comparative Statement Making:

- Helped operations officers by creating comparative statements that enabled faster decision-making and faster overall processes.
- This helped in quicker evaluation of supplier offers and greater transparency in supplier selection.

Assisting Operation Officers with Single Source Selection:

- Helped in the single-source approval process (selecting a single supplier in case of necessity), which is often required when a specific supplier is the only available option to buy from.
- Helped by creating a template for single-source justifications and providing data analysis to support the rationale for choosing a supplier. Also, it helped reduce the time spent on this approval process.

Market and Supplier Evaluation Assistance:

- Assisted the team in market evaluations and supplier evaluations with market visits, helping in gathering insights into supplier performance and market trends.
- Helped in making evaluation metrics to assess supplier reliability, delivery performance, and product quality. These metrics made sure the team ranked suppliers objectively.
- Analyzed market data to find out growing trends and potential cost-saving places, which contributed to the strategic selection of suppliers for numerous product categories.

Strategic Alignment:

- Worked closely with procurement and operations teams to make sure my contributions matched Aarong's bigger goals.
- Shared feedback on usability during team discussions to help refine processes.

Overall Impact:

- The flowchart, CS improvements, and approval templates reduced delays and improved decision-making.
- ERP layout suggestions made data easier to navigate.
- Supplier evaluation work added insights that supported smarter purchasing decisions.

1.3.2 Benefits to the Student

This was my first time in a real corporate environment. I learned how procurement works in practice, not just in theory. I saw how company strategies get applied in day-to-day operations. Most importantly, I gained confidence in handling structured processes and learned how teamwork drives business efficiency.

1.3.3 Problems/Difficulties Faced During the Internship Period

A big challenge for me during my internship was the difficulty in getting specific information needed to complete comparative statements. It was possible to get it from the ERP system. However, due to organizational policies, interns were not allowed to access the ERP system, making it challenging for me. Additionally, unstructured and ineffective communication with suppliers resulted in unclear offers, complicating the procurement process. These were the main obstacles I faced during my internship.

1.3.4 Recommendations to the Company on Future Internships

I recommend developing a clear, concise step-by-step procedure for future interns. Because of that, the interns will have a clear guide throughout the three-month internship. Also, it would be beneficial to have specific time slots for procurement-related training for the interns throughout the internship. Interns should also be engaged in meetings to gain an in-depth understanding of the company's procedures. Furthermore, making market visits a mandatory part of the internship would help interns with valuable hands-on experience and a more thorough understanding of the industry.

CHAPTER 2

Organization Part

2.1 Introduction

2.1.1 Objective(s)

- To summarize Aarong's history, social mission, and its evolution into Bangladesh's leading craft-based lifestyle brand.
- To articulate Aarong's mission, vision, and core values.
- To describe Aarong's organogram.
- To assess Aarong's leadership style, marketing function, operational activities, and financial performance.
- To assess Aarong's competitive advantages.

2.1.2 Scope of Study

This research investigates Aarong's organizational operations, management practices, marketing strategies, financial performance, and competitive positioning from its founding in 1978 through 2025.

2.1.3 Methodology

Research Design

Descriptive design to comprehensively analyze management practices. The study is based on qualitative research.

Data Sources

- Secondary documents from Aarong annual reports
- Published reports within BRACU Institutional Repository (<https://dspace.bracu.ac.bd/>)
- Interviews from Staff

Ethical consideration

- All interview participants provided consents

2.1.4 Significance of Study

- Practical implications of Aarong's business
- Learnings from policies and development steps
- Learnings from financial crisis management

2.1.5 Limitations

- Secondary data dependence
- Information access limitations

2.2 Overview of the Company

2.2.1 Historical Background and Legacy

Aarong, a word that means "village fair" in Bengali, began in 1978. It is a social enterprise of BRAC, a large non-governmental organization. This project of Aarong has been helping to reduce poverty since 1978, while restoring Bangladesh's craft history. Aarong's history shows its success in forming a market for products such as Nakshi Kantha and pottery along with Jamdani. This story of Aarong providing fair wages and preventing traditional skills from disappearing has continued.

After 47 years of operating, Aarong has now become Bangladesh's main lifestyle brand. It has many retail stores plus a varied product selection. The company runs big on social and economic effect, because it helps thousands of artisans and their families through production centers. By combining traditional craft with modern design, Aarong has made Bangladeshi crafts popular; they are now a symbol of national pride.

2.2.2 Mission, Vision, and Core Values

Mission

“Our mission is to empower people and communities in situations of poverty, illiteracy, disease and social injustice. Our interventions aim to achieve large scale, positive changes

through economic and social programmes that enable women and men to realise their potential.”

Core Values

Integrity: acting with transparency, accountability, and honesty in every decision and interaction.

Innovation: fostering creativity and continuous improvement to drive social impact and redefine market standards.

Inclusiveness: welcoming and valuing diversity of age, gender, ethnicity, ability, and belief, ensuring every voice is heard and respected.

Effectiveness: maximizing the reach and impact of interventions through strategic planning, efficient resource use, and outcome-driven execution.

2.2.3 Organizational Structure and Key Divisions

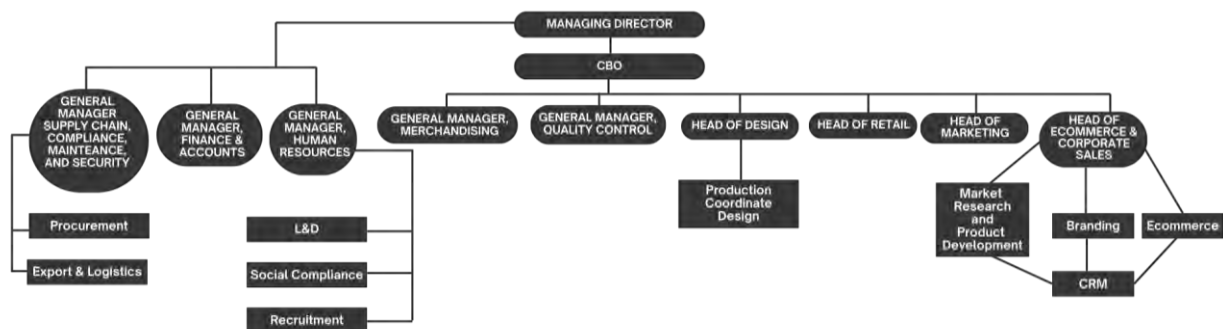


Figure 1: Organogram of Aarong

2.3 Management Practices

2.3.1 Leadership style

Based on observations and discussions with personnel from Procurement, AAF, Accounts & Finance, HR, Marketing, Design, and E-commerce, it can be concluded that Aarong follows a contingency leadership style. This approach is rooted in the thought that there is no single best way to lead. Rather, the best leadership style depends on the specific context or situation (Shonk, 2025).

In this report, Aarong is shown to have a combination of autocratic, democratic, and laissez-faire leadership styles, depending on the departmental needs and circumstances. Some examples include:

- **Autocratic Style:** One manager instructed market-going officers going to the market to leave the office early for market inspection and procurement activities. Although leaving one hour later was more appropriate for the department. The decision was made without discussing it with the officers, which shows an autocratic way to leadership style.
- **Democratic Style:** In the Procurement Department, particularly within the Capex sub-department, managers consult with subordinates before any orders are placed for better purchases. Although approval is required from the managers, decisions are made through discussion, which shows a democratic style.
- **Laissez-faire Style:** In the Trims and Accessories sub-department, employees make purchasing decisions independently, with minimal managerial involvement, indicating a laissez-faire approach.

Overall, democratic leadership is the most common method used across departments at Aarong.

2.3.2 Human Resource Planning Process

Aarong's Human Resource Planning (HRP) process is a structured and multi-dimensional approach. The HR department is divided into the following seven units:

1. Recruitment & Employer Branding
2. Rewards and Employee Relations
3. Learning and Development
4. HR Operations
5. Retail HR
6. AAF HR (Ayesha Abed Foundation HR)

7. Documentation Library

Each of these units independently manages a specific type of task but ultimately contributes to the broader human resource planning strategy of the organization. (Omi, 2023; Rahman, 2023; Islam, 2023)

2.3.2.1 Recruitment and Selection Process

- **Internal Sources:** This is used for promotions, transfers, and non-entry-level positions. Existing employees are considered better choices due to their familiarity with the work environment and organizational culture. HR and relevant departments make the promotion and transfer decisions together.
- **External Sources:** Through various ads on platforms like LinkedIn, BDjobs, and newspapers, Aarong attracts fresh talent and bring innovation. These ads include job descriptions, qualifications, application deadlines, and contact details.

Recruitment process step by step						
Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Requisition and Approval	Job Advertisement and CV Selection	CV screening and shortlisting	Selection (varies depending on position)	Orientation & Training (Role Specific)	Appointment and Documentation	Performance Management and Confirmation

Table 1: Recruitment process step by step

**Note: For internship positions, the performance management and confirmation part are not applicable. **

2.3.2.2 The Compensation System

Monetary Compensation

Aarong makes sure that all financial compensation is managed efficiently, transparently, and in alignment with job grade (e.g., grade 6/7/8 etc.) and responsibilities.

- **Salary Structure and Disbursement:** Salaries are paid on the day before the last day of each month. In the rare event of a delay, payment is completed by the 15th of the following month. All permanent employees get annual salary increments, which are determined based on their designated job grade.
- **Bonuses:** Employees receive a celebration bonus twice each year. Each bonus is equal to 50% of the employee's basic salary and is given during two major occasions of the year.
- **Allowances:**
 - i. House Rent Allowance: Monthly housing support is given based on job grade.
 - ii. Travel Allowance: Regular staff receive BDT 1,700 per month unless they use the organization's transport service.
 - iii. Mobile Allowance: Officers receive BDT 500, while managers receive BDT 1,200 to cover their mobile expenses.
 - iv. Medical Allowance: Provided monthly, differing by employee grade to support healthcare needs.
 - v. Movement and Transfer Allowance: Movement allowance is granted after employment confirmation. Employees transferred to a different location are given two days of paid leave.
 - vi. Overtime and Holiday Compensation: Employees working extra hours get extra pay or time off according to Aarong's policy.
 - vii. Special Task Allowance: For working on special recruitment days or events during holidays, employees are given BDT 600 per day, with travel expenses.
 - viii. Gratuity: Employees completing three years of service are eligible for a gratuity equivalent to one month's final basic salary for each year served.

Leave Entitlements

To support work-life balance, Aarong offers a distinctive and employee-friendly leave policy:

- Earned Leave: Accrued from active working days, excluding weekends and official holidays.
- Sick Leave: Each employee gets 14 days of sick leave each year.

- Maternity Leave: 6 months of leave. They also get an extra 6 months of unpaid maternity leave.
- Paternity Leave: Full time male employees have the opportunity of one month of paid paternity leave.
- Mandatory Leave: Employees who work 6 days a week receive 6 days extra leaves per year.
- Annual and Weekly Holidays:
 - i. Head Office: Fridays and Saturdays.
 - ii. Field Offices/Outlets: Typically, Fridays.
 - iii. Security Guards: Male guards receive 2 off-days per month whereas female guards receive 1 off-day per week.
- Study Leave: Paid or unpaid leave is granted for higher education based on management approval.

Non-Monetary Compensation

- **Daycare Facilities:** Aarong has an in-house daycare center called “Aador”. The purpose is to support working employees. This helps workers have their children nearby and at the same time work.
- **Uniforms:** Service staff, including drivers, logistics, and maintenance personnel, get a set of uniforms annually.
- **Employee Discount:** Aarong employees have the benefit of getting 10% discount on all Aarong products.
- **Annual Picnic:** Aarong organizes yearly picnics to develop workplace bonds. The picnic consists of games, performances, and meals for employees and their families throughout the trip.

2.3.2.3 The Training and Development Initiatives

Aarong has a structured and unique training system meant for the improvement of employees at all levels. From interns to entry-level staff to mid and senior-level staff. The initiatives are:

1	Utilization of BRAC Learning Centers Nationwide: Capitalizes on a big network of nineteen learning centers.
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2	Onboarding and Orientation Programs
3	In-House Training for Operational Roles: The objective for this training is to make sure that all employees have the necessary skills and confidence to perform their duties in a retail environment.
4	Department-Specific and Role-Based Training
5	Intern Training and Workshops: Interns at Aarong are also given the opportunity to increase their skillset for the workplace through specific trainings. The common trainings provided to interns include: • Business Communication • Basic Microsoft Excel • Corporate Work Culture • CV Writing Skills
6	Professional Development for Permanent Employees: For the permanent employees, Aarong paves the way for continuous professional development through online certifications and advanced training programs. The following trainings are usually done: • Six Sigma Certification • GA4 Advanced Analytics • Inventory Management • Team Leadership • Corporate Work Culture • Advanced Excel Skills
7	Progressive Learning and Development Approach

Table 2: Training Initiatives

2.3.2.4 The Performance Appraisal System

Aarong's performance appraisal system, part of its Performance Management System (PMS), evaluates employee performance. It helps to determine promotions, what the employees have done throughout the year, and how it impacted the organization. It checks the strengths and weaknesses, and recommends actions needed. For example, it could be promotions or

terminations. HR leads the annual appraisal process, which includes a thorough review based on multiple criteria for each employee. The performance is looked at over the year to inform improvement initiatives. The PMS ensures confidentiality during its implementation.

2.4 Marketing Practices

2.4.1 Marketing strategy

Aarong's marketing strategy follows an approach that mixes genuine culture and modern views. With that, Aarong now leads as the best lifestyle brand in Bangladesh. The company follows segmentation and positioning (STP) and attracts mainly middle to upper-class customers. Specifically, it targets customers who prefer handcrafted, ethically produced clothes. The marketing mix of Aarong includes premium artisan-made products, differentiation, extensive retail, and a strong digital presence, in which the e-commerce sector plays a big role. The brand follows cause marketing by highlighting its social enterprise roots, established by Sir Fazle Abed, and the empowerment of rural artisans. Customer loyalty is built through CRM systems, reward programs, and exclusive events. Other approaches in marketing include strategic partnerships and high-profile fashion campaigns to improve brand recognition and desirability. To sum up, Aarong's marketing approach combines heritage, social impact, and modern appeal to sustain a long reach within the country and outside the country.

2.4.2 Target customers and positioning

Core Customer Base	Fashion-Conscious Individuals
	Culturally rooted yet modern consumers
	Trendy niche segment through Taaga, Taaga Man, and HerStory
	Bangladeshi diaspora and international buyers

Table 3

Differentiated targeting strategy	Offering products of various prices. Can be affordable, can be premium.
	Segmentation is made using demographic, geographic, psychographic, and behavioral criteria

Table 4

Positioning strategy	Cultural authenticity and heritage, through its artisan-made products
	A socially responsible identity
	A balance of tradition and innovation
	Quality, purpose-driven retailing

Table 5

2.4.3 Marketing channels

Aarong follows a hybrid distribution strategy that combines both physical and digital channels to achieve the most market reach for products and related services. The channels are designed to have accessibility, brand experience, and convenience for all diverse sets of customers.

31 Retail Outlets
Ecommerce platform (www.aarong.com)
Mobile App
Social Media and Digital Marketing

Table 6: Marketing Channels

2.4.4 Product development and competitive practices

Core Product Category	Women's products: Traditional sarees, salwar kameez, Panjabis, kurtas, tops, maternity wear, coats & jackets, skirts, pants, nightwear, shoes, accessories, loose fabric pieces
	Men's products: Panjabis, Panjabi-pajama sets, shirts, t-shirts, fatuas, short kurtas, polos, sleeping suits, lungis, coaty, trousers, shoes, accessories
	Children's products: Nimas, frocks, ghagra choli, gift sets, toys & books, shoes, etc.
	Home Décor: Living, dining, décor items, lawn & gardening products, stationery & gift cards, kids' home items
	Beauty products: Handmade soaps, body washes, face masks, hair packs, shampoos, mehndi
	Jewelry: Earrings, rings, bracelets, necklaces, nose pins, anklets, hair accessories

Table 7

Premium Sub Brand	Taaga: Western-influenced fashion wear for women
	Taaga Men: Men's western-influenced fashion line
	HerStory: Exclusive high-end collection with items costing up to BDT 130,000 per piece

Table 8

New Product/Service	International shipping, mobile app development
Competition	Aarong is a market leader, dominating the handicraft market share with 68% (Razit, 2023)
	Extensive network of 31 outlets across Bangladesh
	Differentiation strategy by combining traditional craftsmanship and contemporary design

Table 9

2.4.5 Branding activities

Aarong prides itself as a social enterprise of BRAC and leverages the connection and history. Aarong promises commitment to quality, authenticity, and social responsibility, and thus a strong reputation is built around these principles. Also, the image of empowering artisans and how Aarong assists in their daily lives, along with preserving Bangladeshi culture, is Aarong's strategic direction. Another strategy Aarong follows is based on storytelling, with a strong focus on empowering rural artisans and promoting ethical sourcing, portraying the brand as a symbol of quality, authenticity, and social responsibility.

2.4.6 Advertising and promotion strategies

Recently, Aarong has made digital marketing the primary focus for its advertising and promotion strategies. Additionally, Aarong tries to build on mobile and app marketing, digital advertising, traditional marketing channels, and strategic partnerships as part of its greater marketing vision.

Altogether, Aarong implements a 4Ps marketing mix framework:

Product	Place	Price	Promotion
Variety of products, new products, innovation	Outlets across Bangladesh and a strong digital presence outside Bangladesh	Pricing strategy targeting middle to upper class families	Leverages a multichannel approach with a focus on digital platforms

Table 11: 4P Framework

2.4.7 Critical Marketing Issues and Gaps

- **Value for Money Gap:** Customers do not see a strong connection between the higher prices and the products' clear social impact. This creates doubt in customers' minds about the price.
- **Digital Experience Gap:** The website and app lack customer-engaging features. On top of that, slow performance and search issues create barriers for customers.
- **Post-Purchase Gap:** After-sales service and delivery processes do not meet customers' demands, which prevents customer satisfaction and long-term loyalty, and ultimately results in lost customers.

2.5 Financial Performance and Accounting Practices

2.5.1 Financial performance analysis

Aarong has developed greatly financially over the five-year period from 2020 to 2024. It included recovering from recurring losses during the covid-19 pandemic to a profitable situation at present. The company achieved a marvelous 29.65% compound annual growth rate (CAGR) in revenue. It grew from 5.83 billion taka in 2020 to 16.49 billion taka in 2024.

2.5.1.1 Liquidity and Solvency

Year	Current Ratio	Quick Ratio	Cash Ratio
2020	2.50	0.36	0.08
2021	2.55	0.50	0.03
2022	2.45	1.00	0.06
2023	2.48	1.04	0.10
2024	2.01	0.35	0.03

Table 12: Liquidity and Solvency Ratios

Aarong also had strong liquidity ratios throughout the 2020-2024 years. The current ratio averaged 2.40 over five years, showing a strong short-term debt coverage capability. However, the 2024 decline to 2.01 should be given attention, although it remains within acceptable ranges. The quick ratio shows volatility, indicating heavy reliance on inventory for liquidity. The significantly low quick ratio of 0.35 in 2024 indicates potential inventory management challenges. The organization maintains little debt with an average debt-to-assets ratio of 33.24%, well within the optimal range of 30-50% for retail enterprises. It is also noticeable that the equity ratio consistently exceeds 64%, showing strong financial stability and low bankruptcy risk.

2.5.1.2 Efficiency

In terms of efficiency, Aarong shows improvement through an increasing asset turnover from 0.68 in 2020 to a high of 1.32 in 2023. However, it moderates to 1.10 in 2024. This improvement, still, shows the company has been focusing on increasing its revenue generation per unit of assets invested. Analysis of inventory turnover shows a massive hike in

improvement. It shows days in inventory decreased from 345 days in 2020 to 149 days in 2023. Yet, afterwards in 2024, it increased to 216 days. Therefore, overall, there needs to be more focus on the turnover.

2.5.1.3 Profitability

Aarong's profitability transformation from the covid-19 disaster is remarkable, recovering from a -6.77% net profit margin in 2020 to consistent profitability thereafter. During 2022-2023, the company had an excellent performance with 8.53% and 6.57% net profit margins, respectively. The Return on Assets (ROA) also rose from -4.59% in 2020 to an average of 7.15% over 2021-2024, proving a greater use of assets. For Return on Equity (ROE), Aarong recovered dramatically from -6.81% in 2020 to a high at 13.01% in 2023. Lastly, the operating margin was consistently strong, ranging from 14.88% to 18.84% in recent years, also demonstrating strong financial stability for Aarong.

2.5.1.4 Market Value

Not available, as Aarong is not a publicly listed company

2.5.1.5 DuPont Analysis

The DuPont decomposition reveals the drivers of ROE performance:

Year	Net Profit Margin	×	Asset Turnover	×	Equity Multiplier	=	ROE
2020	-6.77%	×	0.678	×	1.483	=	-6.81%
2021	6.48%	×	0.890	×	1.455	=	8.39%
2022	8.53%	×	1.004	×	1.503	=	12.87%
2023	6.57%	×	1.324	×	1.496	=	13.01%
2024	5.10%	×	1.100	×	1.556	=	8.73%

Table 13: DuPont Analysis

2.5.1.6 Horizontal Analysis

Year	Revenue Growth	Total Expenses Growth	Net Income Growth	Total Assets Growth
2021	40.55%	31.74%	Recovery from loss	7.10%
2022	40.08%	28.49%	84.40%	24.17%
2023	34.53%	31.21%	3.66%	2.03%
2024	6.68%	11.89%	-17.24%	28.36%

Table 14: Horizontal Analysis

2.5.1.7 Vertical Analysis

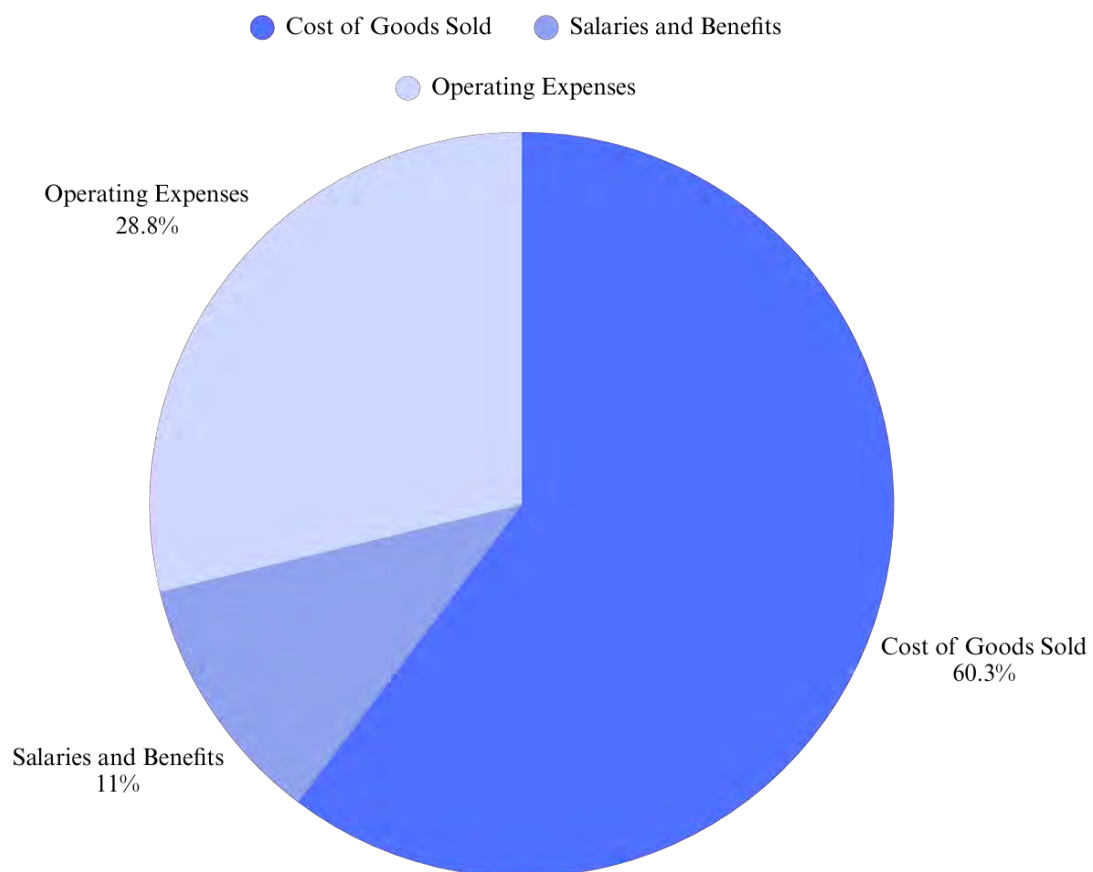


Figure 2: Vertical Analysis

Cost Structure 2024:

- Cost of goods sold: 60.26% of revenue (primary cost driver)
- Salaries and benefits: 10.96% of revenue
- Operating expenses: 28.78% of revenue

The whole analysis shows the company has huge procurement and production costs.

2.5.1.8 EVA

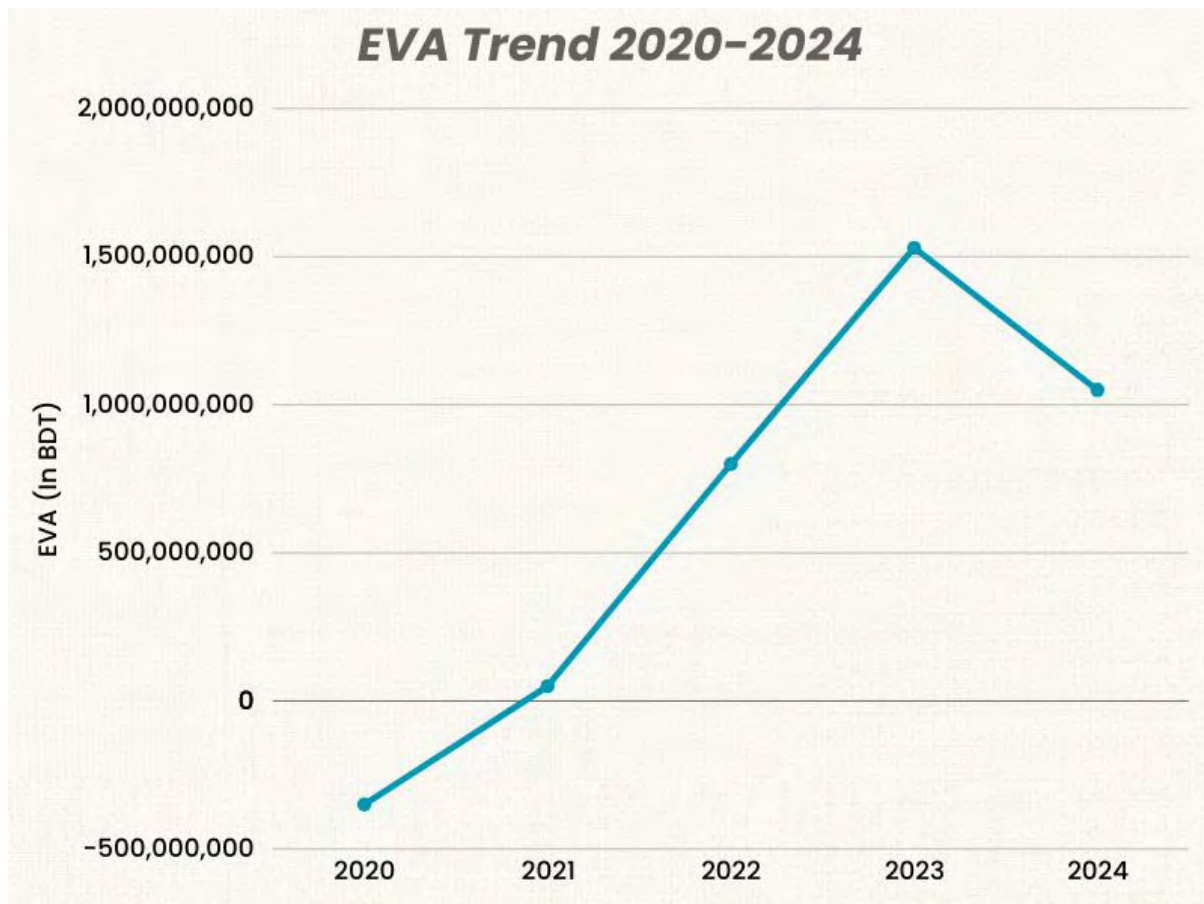


Figure 3: EVA Trends

Covid-19 brought destruction. This is quite clear with the EVA showing -349.6 million taka loss in 2020. However, there is a huge value creation with improvement in economic performance following that year. In 2023 for example, the EVA was 1.53 billion taka, which represents the improvement clearly. The 2024 EVA of 1.05 billion taka shows a lower value creation compared to the previous year, but it is still quite a high value compared to the industry.

2.5.1.8 Interpretation and Insights

Strengths Identified:

- Excellent revenue growth rate (29.65% CAGR)
- Successful ability to difficult periods
- Financial structure is conservative and the leverage risk is low
- Real value creating, proved with EVA

Areas for Improvement:

- Inventory management focus
- Profit margin stabilization
- Improve cash conversion so that it is better for liquidity
- Creating more successful working capital

2.5.2 Accounting Practice

2.5.2.1 Core Accounting Principles

- Aarong uses going concern and consistency principles each year.
- Meets full disclosure along with notes detail grant income recognition, tax provisions, and both current and deferred liabilities.
- Matching and cost principles explain why the income statement expenses are recorded in the same period as the related revenues. It also shows that inventories, and fixed assets are taken at cost less depreciation.

2.5.2.2 Basis of Accounting

Aarong follows the accrual basis of accounting throughout its operations. Revenues, grant income, and expenses (including salaries, depreciation, and social program costs) are recognized when earned or incurred rather than upon cash receipt or payment.

2.5.2.3 Accounting cycle completeness

The published statements show all accounting cycle steps: journal entries for purchases and receivables, ledger posting, trial balances, adjustment entries for depreciation and provisions, preparation of IFRS-compliant financial statements, and closing entries resetting nominal accounts for the next period. Monthly and year-end reconciliations, like bank, VAT, interprogram allocations, support the completeness of each cycle.

2.5.2.4 Depreciation Methods

Furniture, fixed assets, and equipment are depreciated using the straight-line method, after estimating their useful lives. Annual depreciation charges are consistently revealed and categorized into a single line item. No accelerated or unit-of-production methods are used.

2.5.2.5 Accounting Disclosures

- Fixed-asset schedules break down cost, accumulated depreciation, and net book value.
- Commitments and contingencies are explained, including lease obligations and grant refund contingent liabilities.
- The tax note reconciles the theoretical and effective tax charge, disclosing current and deferred components.
- Related-party transactions, especially with the BRAC Development Program and the Ayesha Abed Foundation, are separately identified.
- Segment information highlights the split between social development programs and commercial enterprise activities.

2.6 Operations Management and Information System Practices

Aarong manages a comprehensive information system that integrates the procedures for collecting, storing, processing, and sharing customer-related data with internal and external stakeholders. The information system includes the use of C#, React, Microsoft SQL Server, Desktop ERP, Web ERP, and a POS system.

Aarongs way of collecting data, store those data, and process, web based Information System is used. It also processes customer, internal stakeholder, and vendor data. The language they use: A react-based frontend, and a C# backend which allows for real time interaction. Moreover, the company uses Microsoft SQL Server.

All combined, there are two main software connecting important information for the company: web-based ERP an ERP software on windows. The web-based ERP system is used to access and manage customer information. The software ERP system doesnt need web browser as it is a software.

Moreover, the Point of Sale (POS) system within Aarong combines with a personal server using Redmine. With that, enabling BRAC's team to track and manage transactions and

customer interactions in real time. Which in turn makes sure of transparency and great communication with internal stakeholders. Support in these areas make Aarong as an excellent office management solution.

Office Management Software

For database management, Microsoft SQL Server is used. The POS system fusions with Redmine which then in turn supports managing workflows, tasks, and communications. Thus, Microsoft SQL Server and the POS system together work as a strong office management solution for the organization.

Practices

To maintain high standards for software performance and data accuracy, structured data storage in SQL and maintainable codebases of C# and React are used. Additionally, the integration of Redmine allows for task scheduling, milestone tracking, and efficient allocation of human resources across projects, particularly in the POS environment. For operations management, the dual ERP setup enables the company to run its operations both offline and online, ensuring fast and effective communication within the organization.

2.7 Industry and Competitive Analysis

2.7.1 Porter's Five Forces Analysis

Competitive Rivalry	Threat of New Entrants	Bargaining Power of Suppliers	Bargaining Power of Buyers	Threat of Substitutes
LOW TO MODERATE	LOW	MODERATE	MODERATE	MODERATE
- Low direct competition in handicrafts/traditional apparel: - Strong cultural connection, artisan-based production, unique hand-crafted designs. - Few can match Aarong's niche in authentic Bangladeshi handicrafts. - More intense competition for Taaga Man: - Many competitors on price, quality, and innovation. - Overall market not fully saturated: - Growth potential in urban areas, online, and exports. - Aarong's Competitive Advantage: - Strong artisan network, high-quality hand-crafted products, brand reputation (difficult to replicate).	- High entry barriers in handicrafts/lifestyle market: - High capital requirements. - Established brand loyalty. - Extensive artisan network. - Well-developed distribution channels. - Regulatory compliance and economies of scale. - Clothing market expanding, but Aarong's unique position protects it: - Unique reputation, premium locations, artisan relationships. - Few significant new entrants recently.	- Mixed supplier base: - Fewer, more powerful suppliers for fabrics, trims, and accessories (harder to switch). - Numerous, less influential suppliers for capex and opex items. - Key textile inputs: - Most provide standard commodities, but switching for key textile inputs is challenging. - This gives those suppliers moderate bargaining power.	- Target customers: Middle- to high-income Bangladeshi citizens and international diaspora. - Customer behavior: - Customers have alternatives but choose Aarong for brand reputation and unique designs. - Price-sensitive, but limited influence over pricing/quality, especially during peak demand (e.g., Eid).	- Potential substitutes: - Mass-market apparel and home décor. - Locally produced alternatives. - Online marketplaces and boutique artisans (social media). - DIY/customized items. - Imported handicrafts. - Aarong's mitigating factors: - Emphasis on authentic Bangladeshi craftsmanship, high quality, and social impact. - Reduces overall threat for signature hand-crafted products.

Figure 4: Porter's Five Forces Analysis

2.7.2 SWOT Analysis

 Strength	 Weakness	 Opportunities	 Threats
• Strong Competitive Position: Better than competitors in sales, reputation, economies of scale. • Unique Value Proposition: Creates value for artisans, unique hand-crafted designs. • Financial Health: Profit-making. • Social Responsibility: Strong recognition for being part of BRAC, building societal value. • Brand & Artisan Capability: Strong brand reputation; artisans skilled in making designs fitting for Aarong. • Popular & Profitable Products: Regular products like sarees, salwar kameez (women's category), Panjabi, shirts, fatuas (men's traditional wear) are highly popular and profitable. • Competitive Edge: Recognition for social impact and artisan value. • High Customer Loyalty: Significant customer loyalty, sustained even amidst price/fabric quality concerns, especially during festivals.	• Underperforming Areas: Taaga Man sub-brand struggles to bring in the latest fashion for Gen Z/modern generation. • Digital Presence: Could be significantly improved. • Customer Connection Gap: Lack of alignment between customer desires and product offerings. • Resource Limitations: High employee turnover rate leads to unsettling in various departments. • Skill Gaps: Increase process times. • Outdated Technology: Potential for new technologies to hugely reduce process time, enhance supply chain, and positively impact the company. • Customer Complaints: Frequent complaints about fabric quality and price. • Operational Inefficiencies: Inefficiencies exist in certain departments. • Less Competitive Products: Taaga Man products are less competitive compared to other modern fashion products.	• Market & Customer Trends: Leverage emerging trends to target Gen Z and their demands. • Workplace Attraction: Make Aarong a more attractive workplace for the new generation. • New Brand Expansion: Potential to introduce new brands, e.g., home products, within Aarong. • Partnerships & Collaborations: Significant potential for international expansion, collaboration with media stars, and acquisition of strong technology partners. • New Geographic Markets: Opportunities to target international customers who would appreciate Aarong products. • Technological Improvements: Implement a better ERP system, improve digital presence, introduce AI, and train sales staff to enhance efficiency, sales, and customer experience. • Regulatory Changes: Tariff rate changes are creating new opportunities.	Main Competitors: • Yellow: Casual, affordable clothing (price competition). • Cats Eye: Middle-income customers, ready-made apparel. • Smaller Boutiques & Artisan Markets: Offer handmade/traditional items. Competitive Threats: • Price competition from mass-produced items. • Trendy, fast-fashion items appealing to younger audiences (reducing market share). • Aggressive expansion of competitors' retail/online platforms. • Low-quality imitations undermining uniqueness. • Competitors with stronger digital marketing/modern branding. Market Shifts: • Latest styles not fitting for Aarong could negatively affect the company. External Risks: • Economic, political, or regulatory risks (political unrest, social media demands, instability). Technological Obsolescence: • Aarong's unique hand-made designs could be replicated by machines by competitors. • Company might become obsolete if others start mass-producing similar designs with machines. Changing Customer Expectations: • Customers seek cheaper prices due to many alternatives. • This shift towards cheaper products negatively impacts Aarong's business.

Figure 5: SWOT Analysis

2.7.3 Competitive Advantage

BRAC-Aarong's unique compilation of social mission, artisan empowerment, and supply-chain ownership forms its core competitive advantage. Aarong's tactical strengths, such as multi-channel retailing and strong HR practices, can be copied over time. However, the organization's deep community ties, reputation, heritage branding, and BRAC network combination make it difficult for competitors to imitate. That is why Aarong sustains its leadership in the ethical-craft retail industry.

2.8 Summary and Conclusions

To sum up, Aarong promotes empowerment through its resilient nature as a social enterprise. It empowers artisans through ethical sourcing and sustainable growth. The success of the company is built on a strong brand, structured HR systems, and dynamic leadership. Aarong has achieved strong post-pandemic financial recovery despite high market competition. However, it faces challenges in areas like inventory management. The company also needs an improved digital presence. Thus, to sustain its leadership and growth, Aarong must focus on digital upgrades, go in-depth on what affects revenue generation, and more clearly connect its premium offers to how they impact our society overall to communicate its societal impact more clearly to the world.

2.9 Recommendations/Implications

After the thorough analysis of Aarong's organizational, marketing, financial, and competitive environment, the following recommendations can be proposed to strengthen Aarong as a company:

1. Enhance Digital Experience and E-Commerce Capabilities
2. Efficient Inventory Management and Working Capital Management
3. Strengthen Leadership Development and Management Training
4. Leverage BRAC Integration and Social Mission in Marketing
5. Expand International Market Reach
6. Formalize Quality Management and Operations Standards
7. Sustainability and Innovation Initiatives

Implications

Using the abovementioned suggestions will increase Aarong's decision making abilities, bring in more customers, and solidify its financial stability. A more enhanced digital experience for the customers and more digitally advanced operations will overall contribute to Aarong's long-term sustainability. In conclusion, strategies based on these recommendations will be the most effective going forward for the company.

CHAPTER 3

Project Part

The Impact of Lead Time and Requisition Quantity on Delivery Performance for Fixed Assets and Recurring Items

3.1 Introduction

3.1.1 Background and Problem Statement

In current supply chain management, effective procurement practices are required to achieve optimum company output. Fixed assets and recurring items are crucial in the smooth running of the entire procurement process of most organizations in various industries. Businesses cannot grow and be efficient without these products. Nonetheless, it is highly likely to introduce complexities that may impact delivery performance (Masa'deh et al., 2022). The interrelationships among fixed assets and recurring items and delivery performance have been studied. Their influence on Aarong procurement is discussed in this paper. The latter can be seen at Aarong, where purchasing procedures are complicated and consist of numerous steps, including the creation and sending of requisitions, requests for quotation (RFQs), issuing purchase orders, quality control, etc.

Fixed assets are tangible items, including equipment, infrastructure, and technology required to run long-term operations. In comparison, recurring products are the products that are related to everyday necessities, accessories, routine items, services, and so forth. These two types of products are each influencing a procurement decision, but neither has been well studied in relation to other reasons like lead time and requisition quantity.

One of the most important aspects of the procurement process is lead time, or the duration of time between the time of ordering an item and the time of receiving it or the service. Lead time delays can severely impact the overall performance of the delivery in terms of stockouts, incorrect deadlines, and unhappy customers. In addition, the volume of ordered items (also known as requisition quantity) is also a significant factor that affects procurement cycle time. Big quantity requisitions typically imply a more logistically complicated procedure and may extend lead time and influence delivery performance.

Earlier studies have demonstrated the effects of fixed assets, recurring items, lead time, and requisition quantity individually on the procurement activities. However, there is little literature on procurement at Aarong. Meaning, how these variables relate to each other to determine the effects on the results of the delivery. Moreover, the absence of literature in certain areas, including industrial procurement and retail supply chain in relation to Bangladesh, points to the need for a detailed quantitative study, which examines these impacts and relationships.

Thus, this study attempts to address this gap by conducting an in-depth analysis of the relationship between fixed assets and recurring items, lead time, and requisition quantity and their impact on delivery performance in a descriptive and inferential research study. This study conducts statistical modeling and examines the relationship between these variables and their combined effect on the efficiency of procurement and delivery processes. Therefore, the research will provide beneficial data to companies that aim to streamline their procurement processes and shorten delivery times, which will eventually lead to improved business operations and customer satisfaction.

3.1.2 Objective(s)

This paper encompasses the following objectives:

1. To investigate the impacts of fixed assets and recurring items on delivery performance.
2. To find how lead time and requisition quantity affects delivery performance.
3. To analyze how the findings influence operational efficiency.
4. To construct a statistical analysis to find the effect of the independent variables on dependent variable.

3.1.3 Significance

This study is of great practical importance to Aarong Procurement. It looks to improve the process at Aarong supply chain through faster process in procurement and delivery performance. The paper analyzes specifically the impact of fixed assets, recurring items, lead time, and the impact of requisition quantity and through that, offering how it can then be analyzed to make supply chain process better. The results specially help Aarong and other businesses beyond Aarong to acknowledge and take further betterment initiatives. The knowledge can also be used to remove any operational problems, like stockouts or missed deadlines. Which typically arise due to improper management of these variables. So, this chapter develops on existing supply chain literature with data on the relationship between these variables and the goal is provide solution and knowledge to the world that can make better opportunities for other companies.

3.1.4 Scope of the Study

It is limited to the scope of Aarong, where procurement cycles are complex, different, sometimes unstructured. Thus, it doesn't lead to other areas or qualitative features of procurement. Besides, as the research is based on 2024 and 2025, the scope remains to these years only.

3.2 Literature Review

How good procurement strategies are for the modern day supply chain is highly connected to multiple variables. Those include fixed assets, recurring items, lead time, and requisition quantity. First, this literature review explains the findings of existing reputable sources regarding the effects of these variables. Then, it identifies key gaps within those sources, where the root of the research and objective begins.

3.2.1 Procurement System

Procurement is an important part of supply chains. Basically, it is how an organization gets the required goods and services strategically. The procurement system generally follows requisitioning, sourcing, purchasing, and supplier management, and all of it normally affects cost, delivery performance, and other functions of an organization (Monczka et al., 2015). Fundamentally, procurement is highly important because their activities are directly related to other departments. When the activities are in coordination, procurement operations are

streamlined, it helps with supply chain process getting faster, and reduces lead time (Monczka et al., 2015). Also, it is important for procurement to promote transparency, as it is directly related to money and it leads to accountability within the whole process (Thai, 2001). Also, with transparency, good and healthy strategic relationships with suppliers, which help organizations to achieve their goals (Van Weele, 2018).

There are a lot of procurement models existing. Including centralized, decentralized, and hybrid approaches. Centralized procurement describes a single department overseeing all procurement activities, which leads to economies of scale and standardization (Croom et al., 2000). However, it may not fulfill the needs of individual departments. On the other hand, decentralized procurement means each department manages their own procurements, which may be useful for a company needing flexibility and responsiveness (Croom et al., 2000). However, it might be the reason for inefficiencies and inconsistency. The mixed model combines both approaches, which aligns the organizational needs into the system (Kraljic, 1983).

An effective procurement system means effective negotiation, an appropriate level of cost saving, and waste reduction, directly impacting the bottom line (Croom et al., 2000). Also, procurement means the best quality products, services, and reliable suppliers are always there for any company (Kraljic, 1983). Additionally, procurement affects timely delivery and delivery performance overall (Monczka et al., 2015). It can affect risk management too, as good supplier management and diversification within supplier selection can alleviate supply chain disruptions, further strengthening company resilience (Van Weele, 2018).

Still, many gaps exist. New technologies such as artificial intelligence and blockchain are not yet explored that much in the field of procurement (Croom et al., 2011). Moreover, including procurement within sustainability goals, including ethical sourcing, is still an ongoing process (Monczka et al., 2015). Additionally, managing complex supply chains with risks and cultural considerations is still an area requiring comprehensive research (Van Weele, 2018). Finally, procurement performance needs development of standardized metrics to measure the effectiveness of the system (Thai, 2001).

3.2.2 Fixed Assets and Recurring Items

Managing fixed assets and recurring items is challenging but necessary from a supply chain management perspective. It is needed to make the most of procurement performance. For

Aarong, fixed assets are computers, furniture, etc. These are significant for long-term operations. These investments are made to develop operational capacity, which allows businesses to run a stable manufacturing process (Burt et al., 2010). On the other hand, recurring items are daily consumable items and services. In the context of Aarong, these are IT accessories, packaging, etc. These types of items are critical for smooth day-to-day operations needed by businesses (Bowersox et al., 2007).

Research by Chopra and Meindl (2016) explains that fixed assets stop investment of capital in the short run, which could have been used to make operations more efficient. However, in the long run, this fixed asset is invaluable. Conversely, a fixed asset can become a liability when it is not used properly nor managed properly. For recurring items, it usually has a direct connection to stable operations and flexible operations. Therefore, while individual recurring items might seem small, their collective or consistent management is crucial or otherwise it can hamper the supply chain, which leads to stockouts and delays (Christopher, 2016).

Subsequently, the recognized importance has led to little research. Which builds a gap and develops a need for research that explores the relationship between fixed assets and recurring items and their impact on delivery performance.

3.2.3 Lead Time

Lead time is the interval between order time and receiving the delivery, which is highly important in determining how effective a procurement process is (Axsäter, 2015). Lesser lead times usually mean an improved procurement performance because they enable a faster supply chain and minimize inventory stock-out risk (Christopher, 2016). Contrastingly, delays in lead time can result in a hampered process within the supply chain, which generally leads to higher costs and missed deadlines.

Previous literature has consistently shown that lead time directly affects delivery performance. For example, specific research that explored the relationship between lead time and stock availability has found that long lead times lead to inventory management challenges and delays in delivery (Boute et al., 2007). The same authors suggested that reducing lead time can lead to better procurement operations with high efficiency. Another research study further verified that lead time delays lead to procurement cycle time delays, which in turn lead to disruption within the whole supply chain (Stock & Boyer, 2009).

With these insights, examining the interaction between lead time and delivery performance becomes easier. Therefore, this gap in the literature gives an opportunity for this paper to analyze how lead time impacts delivery performance.

3.2.4 Requisition Quantity

A requisition is the request by any internal stakeholder of a company to purchase an item or service. Therefore, requisition quantity is basically the quantity of items ordered. But the relationship between requisition quantity and delivery performance is not straightforward. This is because larger requisitions often have more complex requirements. Research by Heizer & Render (2014) explains that larger requisition sizes can lead to longer lead times because of greater complexity, complex terms, and difficulties in coordination. Then again, large orders can also mean economies of scale, reduced unit costs, and greater delivery efficiency.

A lot of research has been done on the relationship between requisition quantity and how it affects procurement. For instance, larger requisitions lead to better long-term delivery performance even during of economies of scale and available easy transportation (Lee et al., 1997). Research tells it is due to large requisition sizes leading to great logistical challenges and inventory management issues, which can make the procurement process more complex (Bowersox et al., 2007).

Existing literature provides how requisition quantity affects procurement, but a more comprehensive understanding of how requisition quantity impacts delivery performance is needed.

3.2.5 Delivery Performance

Delivery performance is important for procurement and supply chain success. The metric is usually analyzed through on time delivery rate, accurate orders, and delivery speed. These terms are necessary to measure for continuous operations and customer satisfaction (Kannan & Tan, 2005). For effective delivery performance, factors like the procurement process, supplier reliability, lead time, and inventory management are significant (Mangan & Lalwani, 2016). Research also supports the statement. For instance, strategic supplier selection, clear communication, and efficient logistics management are key factors that contribute to a comparatively better delivery performance (Zhao, Huo, & Flynn, 2010). Also, the integration of information systems such as ERP has an important role in making the best of delivery

performance. The ERP does this with real-time tracking, better processes, time reduction, cost savings, and much more (Monczka et al., 2015).

So, overall, there is a need to explore how lead time and requisition quantity specifically affect delivery performance for better decision-making within procurement (Mohammed & Mandal, 2024).

3.2.6 Conceptual Framework

The proposed conceptual framework for this study examines the relationships between lead time, requisition quantity, and delivery performance in fixed assets and recurring procurement items. The model has the following variables:

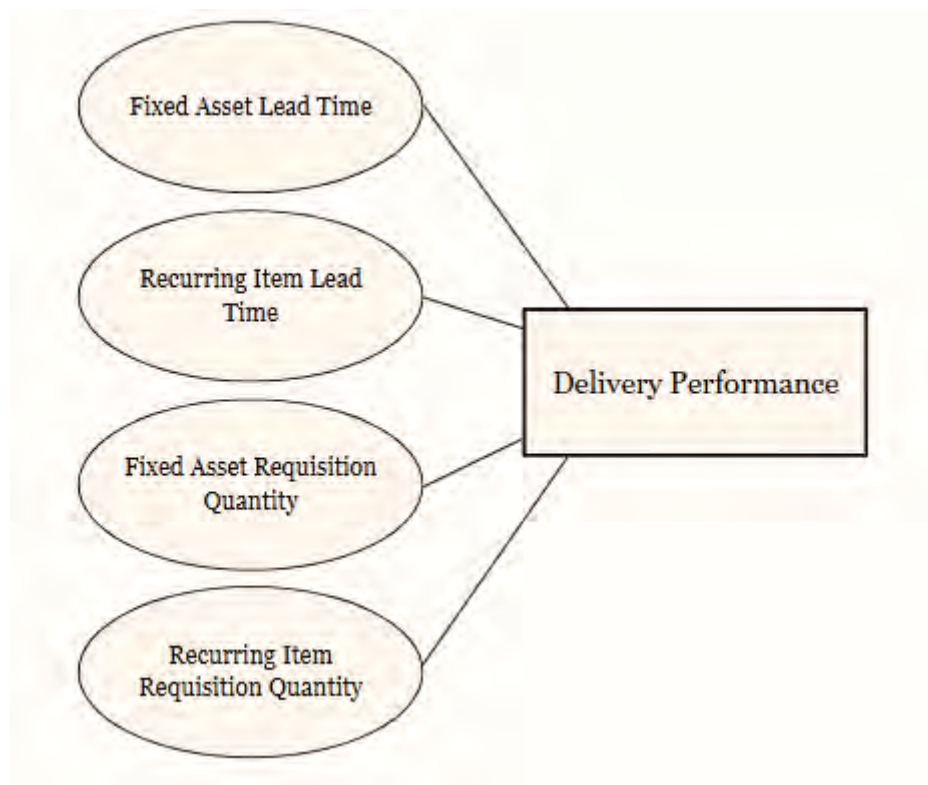


Figure 6: Conceptual Framework

Explanation of figure: The four independent variables are linked directly to delivery performance, while their interactions are hypothesized to impact delivery outcomes.

The framework shows that fixed assets (e.g., computers, furniture) might have a different impact on delivery performance than recurring items. And the impact of lead time and requisition quantity of fixed and recurring items specifically might have an impact on delivery performance. Based on the gaps found and the framework, the following research questions are proposed:

1. Does fixed asset lead time significantly impact delivery performance 2024?
2. Does recurring item lead time significantly impact delivery performance 2024?
3. Does fixed asset requisition quantity significantly impact delivery performance 2024?
4. Does recurring item requisition quantity significantly impact delivery performance 2024?
5. Does fixed asset lead time significantly impact delivery performance 2025?
6. Does recurring item lead time significantly impact delivery performance 2025?
7. Does fixed asset requisition quantity significantly impact delivery performance 2025?
8. Does recurring item requisition quantity significantly impact delivery performance 2025?

Hypotheses developed from the research questions are:

- **Hypothesis (H₁):**
Fixed assets lead time significantly impacts delivery performance in 2024
- **Hypothesis (H₂):**
Recurring item lead time significantly impacts delivery performance 2024
- **Hypothesis (H₃):**
Fixed asset requisition quantity significantly impacts delivery performance in 2024
- **Hypothesis (H₄):**
Recurring item requisition quantity significantly impacts delivery performance 2024
- **Hypothesis (H₅):**
Fixed assets lead time significantly impacts delivery performance in 2025
- **Hypothesis (H₆):**
Recurring item lead time significantly impacts delivery performance 2025
- **Hypothesis (H₇):**

Fixed asset requisition quantity significantly impacts delivery performance in 2025

- **Hypothesis (H₈):**

Recurring item requisition quantity significantly impacts delivery performance in 2025

3.3 Methodology

3.3.1 Research Paradigm

As the research focuses on objectivity, quantity, and hypothesis testing, this research paradigm is positivism. The reason for that is that positivism allows analysis of the relationship between variables using data and generates findings that may be generalized. With the paradigm followed, this research tests predefined hypotheses based on theoretical models. By which the research determines patterns and relationships. Thus, positivism allows the creation of statistical methods that test the hypotheses and verify existing relationships.

3.3.2 Research Design

This research is based on a quantitative research design to systematically analyze the impact of lead time and requisition quantity on delivery performance for fixed and recurring items within Aarong's procurement operations. The quantitative approach follows a reliability, descriptive and inferential analyses of secondary data. It enables the examination of relationships between variables and test the hypotheses. This design ensures objectivity and provides a framework for drawing statistically supported conclusions and inferring patterns from the observed data.

Sample Design

The research implements non-probability sampling approach on procurement records that meet the predefined inclusion criteria from Aarong's ERP system. The population consists of all procurement records related to fixed and recurring items within Aarong during from 2024 and 2025. Thus, the samples here are lead time and requisition quantity of fixed assets and recurring items.

Sample Size

There were 15,000 data in the secondary resource. For validity, the minimum required sample size was calculated using Cochran's formula for finite populations (Bartlett, J. E., II, Kotrlik, J. W., & Higgins, C. C., 2001), with parameters set at a 95% confidence level ($Z = 1.96$), 5%

margin of error ($e = 0.05$), and an assumed population proportion of 0.5 to maximize sample size. For an infinite population, the calculation yielded 385, which, when adjusted for a finite population of 15,000 procurement records, resulted in a required minimum of approximately 376. In this research, however, a total of 3,597 procurement records from June, July, and August of 2024 and 2025 were analyzed. It far exceeds the statistical requirement and helps in creating a strong reliability, and generalizability of the findings within Aarong's procurement operations.

3.3.3 Variables

Variable Type	Variable Name	Description
Independent Variables	Fixed assets Lead time	Lead time for items long term in nature. (e.g, Furnitures, Computers)
	Recurring Items Lead Time	Lead time for items that are used frequently in the daily operations of a company (e.g, packaging materials, IT accessories).
	Fixed assets Requisition Quantity	Requested quantity for items long term in nature. (e.g, Furnitures, Computers)
	Recurring Items Requisition Quantity	Requested quantity for items that are used frequently in the daily operations of a company (e.g, packaging materials, IT accessories).
Dependent Variables	Delivery Performance	This metric measures the speed of delivery. A delivery done more than three days before the lead time expires is classified as fast. If the delivery is done within zero to three days before the expiration of the lead time, it is just-in-time. Deliveries made between zero and three days after the lead time has finished are considered late. Finally, any delivery exceeding three days after the lead time expiration is classified as very late.

3.3.4 Data Collection

The following data is extracted from the ERP system:

- Fixed asset lead time: Order to receiving time of fixed assets (such as equipment, furniture, and technology).
- Recurring item lead time: Order to receive time of recurring items (such as IT accessories, packaging materials, etc.).
- Fixed asset requisition quantity: The quantity of fixed assets requested.
- Recurring item requisition quantity: The quantity of recurring items requested.
- Delivery performance metrics: Delivery speed of items. Whether the delivery arrives in time or late.

The data is of the months June, July, and August of both years. Also, the data will be filtered to exclude any possible irrelevant information (such as missing lead time or requisition quantity values). Which ensures the strength of the dataset. Only the procurement records of fixed and

recurring items are considered in the analysis. This process makes sure that the dataset is a representation of the procurement activity relevant to the study. Finally, it ensures the research is free from any potential sources of bias due to incomplete or irrelevant data.

3.3.5 Data Analysis

Reliability Statistics

The Delivery Performance construct was made with a seven-item scale (dp_q1 to dp_q7), including reverse-coded items (dp_q2_rc, dp_q6_rc). A Cronbach's Alpha analysis was conducted on 3,597 data set. The analysis had the overall Cronbach's Alpha, Alpha based on Standardized Items, and the Inter-Item Correlation Matrix to find the correlations among items. Additionally, Item-Total Statistics were generated to find out each item's contribution, including corrected item-total correlations and the potential effect on Cronbach's Alpha if any item was removed. This process made sure to measure the single construct of delivery performance construct.

Descriptive Statistics

Through IBM SPSS software v25, the average lead time, requisition quantity, and delivery performance metrics for both fixed assets and recurring items are measured. Standard deviations are also found to understand the variability or dispersion of lead time, requisition quantity, and delivery performance. Finally, frequencies are also found to analyze the distribution of different requisition quantities and lead times, as well as delivery performance outcomes (e.g., on-time delivery, order accuracy). These statistics are key to understanding the nature of the data.

Inferential Statistics

Given that reliability test presented good internal consistency, chi-square tests was examined. This aspect measured the impact of categorized lead time (low vs. high) and requisition quantity (low vs. high) on delivery performance for both fixed assets and recurring items. The categorization of lead time and requisition quantity into "low" and "high" groups was based on the median for each year and item type. This analysis was done on the data from 2024 and 2025 separately, using a significance level of $\alpha = .05$. Statistically significant impact which implies that it is not likely due to random chance, a post-hoc analysis would be necessary to understand

the specific categories contributing to this impact. The software used was IBM SPSS software version 25. The results include the following variables:

Chi Square χ^2 (df, N)	This states the chi-square statistic, which measures the discrepancy between observed and expected frequencies. The df represents the degrees of freedom, and N is the total number of observations for the test.
P value (p)	It indicates the probability of obtaining the observed results if there were no true association between the variables. Value less than the significance level of 0.05 suggests a statistically significant association.
Cramer's V (V)	Indicates effect size for the test as a quantifying strength measure of the significance. The value ranges from 0 to 1, where larger values indicate stronger connection. The analysis is done through IBM SPSS statistics version 25. The tests are reported with p-values with the significance level of 0.05. Meaning, less than 0.05 will mean there is no significant relationship between the variables. Conversely, if the level is more than 0.05, it will mean there is a significant relationship between the variables.

3.3.6 Ethical consideration

Since the data is secondary in nature, it ensured that the data collection process was following the company's data privacy and confidentiality policies. All sensitive information within the data is anonymized. It is kept out to prevent identification of specific employees, suppliers, or partners. Finally, the research is done through utmost objectivity.

3.4 Findings & Analysis

3.4.1 Reliability Findings

This test was to validate the internal consistency of the Delivery Performance scale. The reliability test was run on a large sample of 3597 valid cases. The results resulted in Cronbach's Alpha coefficient of 0.895, with the Cronbach's Alpha based on Standardized Items also being 0.895. The Inter-Item Correlation Matrix, shows consistently positive correlations among all

items, ranging from 0.528 to 0.562. The average inter-item correlation is 0.549. The Item-Total Statistics, providing detailed insights into each item's contribution to the overall scale's reliability, are presented below:

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
dp_q1	18.00	44.899	0.698	0.879
dp_q2_rc	18.00	44.948	0.695	0.879
dp_q3	18.00	44.992	0.692	0.880
dp_q4	18.00	44.963	0.694	0.879
dp_q5	18.00	45.246	0.677	0.881
dp_q6_rc	18.00	44.758	0.707	0.878
dp_q7	18.00	44.886	0.699	0.879

Table 15: *Cronbach's Alpha Statistics*

Interpretation and Findings

Cronbach's Alpha of 0.895 indicates excellent internal consistency for the Delivery Performance. This value is significantly higher than the commonly accepted threshold of 0.70, showing that the seven items (dp_q1 to dp_q7), including the reverse-coded items (dp_q2_rc, dp_q6_rc), are coherently measuring a single underlying construct which is Delivery Performance.

All items exhibit strong and positive Corrected Item-Total Correlation values, ranging from 0.677 for dp_q5 to 0.707 for dp_q6_rc. These values are well above the recommended minimum of 0.30, confirming that each item is highly correlated with the total score of the other items in the scale and contributes positively to the overall construct. This suggests that each item is a relevant and consistent indicator of delivery performance.

Furthermore, the Cronbach's Alpha if Item Deleted column shows that removing any single item from the scale would either maintain a very similar alpha value (e.g., deleting dp_q1 results in an alpha of 0.879, very close to the overall 0.895) or slightly decrease the overall reliability (e.g., deleting dp_q6_rc results in an alpha of 0.878, slightly lower than the overall 0.895). This indicates that all seven items are important contributors to the scale's internal consistency, and none are deleterious to its reliability. The consistency of these values suggests

a well-functioning scale. The successful resolution of previous reliability concerns means that this scale can be confidently used for the following statistical analysis in the study.

3.4.2 Descriptive Findings

This research merged the 2024-2025 procurement records of the months of June, July, and August. The whole record contained $N = 3,597$ rows of data. Listwise deletion was used for the Explore procedure within SPSS, so only cases with non-missing values on the analyzed variables were included.

Fixed asset requisitions in 2024 had an average lead time of 40 days ($39.4 \approx 40$). Similarly, recurring items had a mean of around 42 days ($41.5 \approx 42$). In 2025 lead times were much less on average for both categories. Also, the distribution of lead times was quite wide in both 2024 and 2025. It was 26 days ($25.9 \approx 26$) for fixed assets and 24 days ($23.8 \approx 24$) for recurring items. The range of lead times was wide for both years, from 4 days to 400 days.

Recurring item requisition quantities were much more than fixed asset quantities. Also recurring items had high skewness in quantity distributions, with means in the tens of thousands but medians around only 12-20 units. It shows the variability of requisition quantity among recurring items. It also had a maximum reach of 3-4 million units. In contrast, fixed asset requisitions were mostly small, with a median of 1 unit each year, with means of around 3-7 units. The maximum for fixed assets was a few hundred. This indicates that most fixed assets were for single items, whereas recurring items had greater variation.

Year	Item Type	N	Lead Time (days) M	Requisition Quantity M (SD)
2024	Fixed assets	125	39.4	4.3
2024	Recurring Items	1705	41.5	9974.0
2025	Fixed assets	256	25.9	6.9
2025	Recurring Items	1511	23.8	29408.1

Table 16: Descriptive Statistic for Lead Time and Requisition Quantity by Year and Item Type

Treatment of Negative Lead Times

Notably, there was a lot of negative lead time. For example, a minimum of -69 days for fixed assets in 2024. It indicates requisition making after delivery. The requisitions were made after delivery because the product delivery in those circumstances was vital. Without the delivery, there was high probability of potential hampering in production processes. Therefore,

requisition after delivery in emergency situations are accepted, and thus -69 days in this case is accepted too. However, for accurate results, these negative lead days have been removed.

Delivery Performance Distribution

Delivery performance outcomes were categorized as Fast, Just-in-Time, Late, or Very Late. The distribution of the performance between the categories of fixed asset and recurring item was different. In 2024, an overwhelming 91.2% of fixed asset requisitions were delivered very late, with only 3.2% delivered fast, meaning ahead of expected lead time. Contrastingly, most recurring item requisitions, 79.2% to be precise, were delivered fast. Only 5.7% fell into the Very Late category. The remaining categories, Just In Time and Late, took a small fraction of both fixed assets and recurring items in 2024, with under 10% for each group.

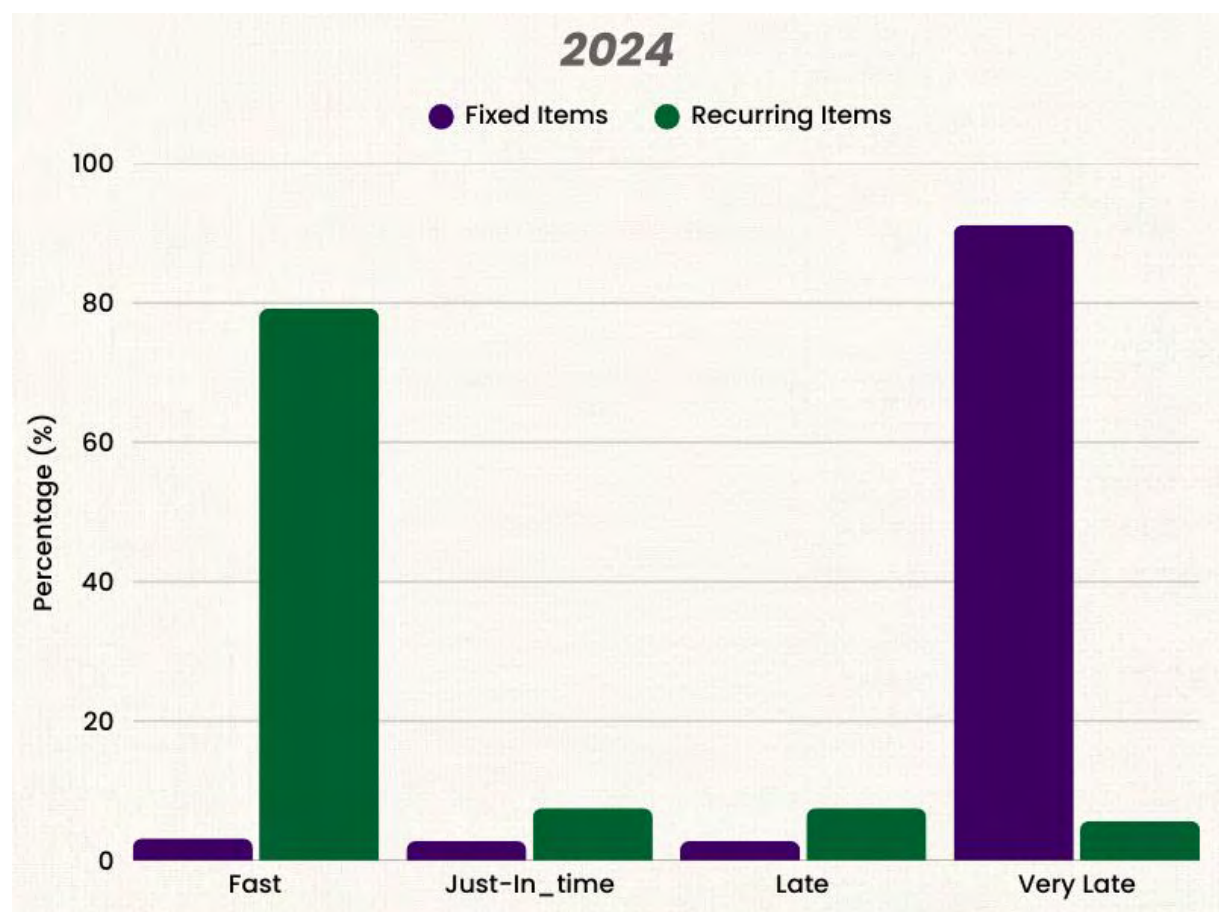


Figure 7: Delivery performance distribution (%) in 2024 by item type (Fixed Asset vs. Recurring Item). Each bar represents the percentage of requisitions falling into Fast, Just-in-Time, Late, or Very Late delivery categories for that item type.

Forward to 2025, the performance of fixed assets shifted toward better delivery timing (Figure 2). Fixed asset requisitions had about 52.7% *very late* deliveries. Which was substantially lower than the previous year, and 46.1% *fast* deliveries, showing a more balanced outcome. On the other hand, recurring items in 2025 maintained a high rate of *fast* deliveries with 78.8%, like 2024, but *very late* deliveries increased to 10.0%. Still, recurring items largely outperformed fixed assets in both years in terms of on-time delivery rates. *Late* and *Just-in-Time* categories remained relatively small in percentage for both recurring and fixed asset types in 2025. For example, only 3.4% of recurring items were late, and there were no visible fixed assets that were categorized as *late* in 2025.

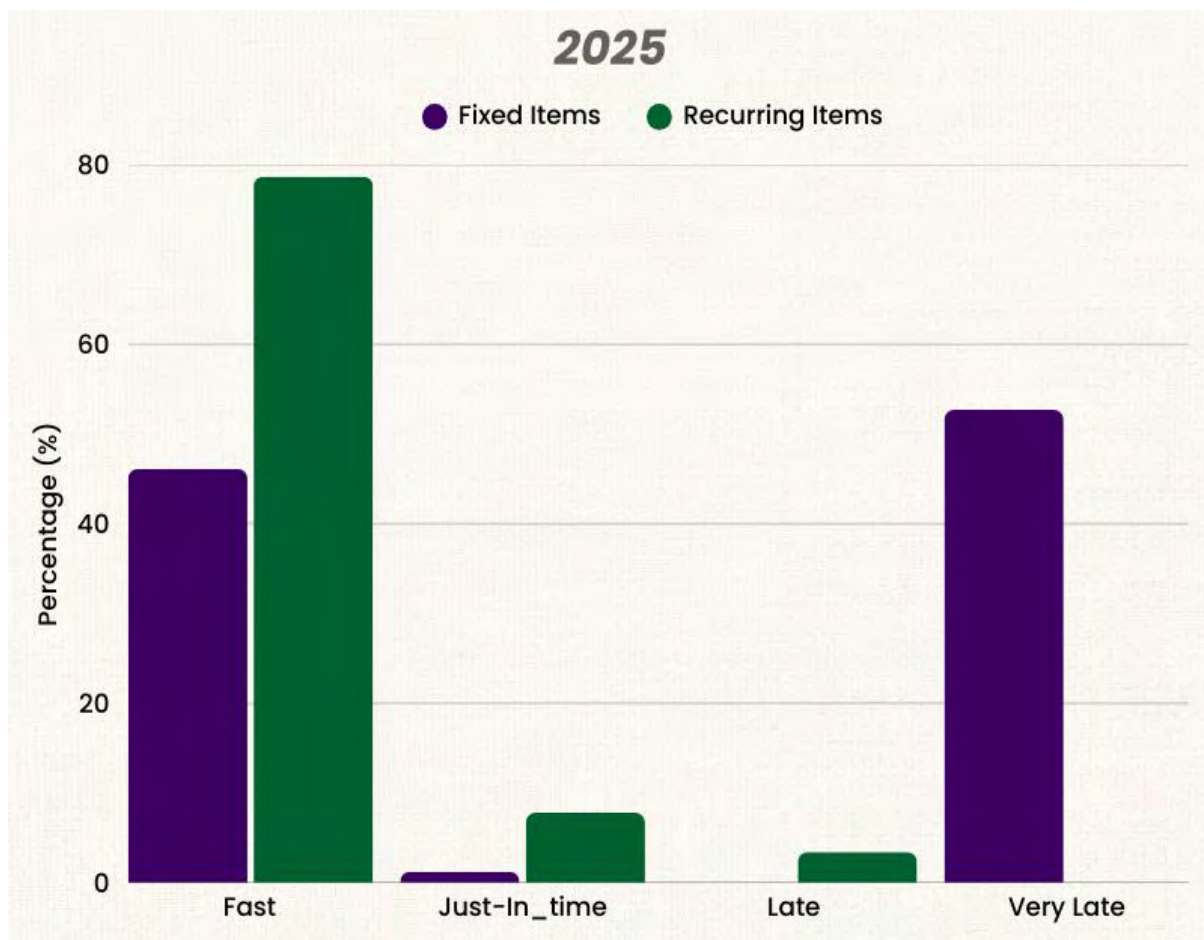


Figure 8: Delivery performance distribution (%) in 2025 by item type.

3.4.3 Inferential Findings

Predictor (Item Type)	χ^2 (df, N)	<i>p</i>	Cramer's V
Fixed Asset Lead Time (H ₁)	χ^2 (3, N=124) = 5.413	.209	0.209
Recurring Item Lead Time (H ₂)	χ^2 (3, N=1696) = 75.201	.211	0.211
Fixed Asset Requisition Quantity (H ₃)	χ^2 (3, N=124) = .299	.049	0.049

Recurring Item Requisition Quantity (H ₄)	χ^2 (3, N=1696) = 27.510	.127	0.127
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Table 17: Chi-square tests for association between lead time/requisition quantity and delivery performance in 2024

Predictor (Item Type)	χ^2 (df, N)	<i>p</i>	Cramer's V
Fixed Asset Lead Time (H ₅)	χ^2 (2, N=256) = 21.917	.293	0.293
Recurring Item Lead Time (H ₆)	χ^2 (3, N=1511) = 340.765	.475	0.475
Fixed Asset Requisition Quantity (H ₇)	χ^2 (2, N=256) = 0.207	.028	0.028
Recurring Item Requisition Quantity (H ₈)	χ^2 (3, N=1511) = 1.038	.026	0.026

Table 18: Chi-square tests for association between lead time/requisition quantity and delivery performance in 2025.

Interpretation of the Findings

2024

- **Fixed Asset Lead Time:** The chi-square test for fixed asset lead time in 2024 shows $\chi^2 = 5.413$, with $p = .209$. Since $p > .05$, there is no statistically significant association between fixed asset lead time and delivery performance. The Cramer's V of 0.209 suggests a possible small-to-medium effect, but the lack of statistical significance makes this result unreliable.
- **Recurring Item Lead Time:** The analysis for recurring item lead time yielded $\chi^2 = 75.201$, with $p = .211$. Since $p > .05$, there is no significant association with delivery performance. The Cramer's V of 0.211 suggests a small-to-medium effect, but this too is not statistically reliable.
- **Fixed Asset Requisition Quantity:** The test for fixed asset requisition quantity resulted in $\chi^2 = 0.299$, with $p = .049$. As $p < .05$, there is statistically significant association with delivery performance. The Cramer's V of 0.049 indicates a negligible effect size.
- **Recurring Item Requisition Quantity:** For recurring item requisition quantity, the test showed $\chi^2 = 27.510$, with $p = .127$. Because $p > .05$, the association is not statistically significant. The Cramer's V of 0.127 suggests only a small effect size.

2025

- **Fixed Asset Lead Time:** In 2025, the chi-square test for fixed asset lead time shows $\chi^2 = 21.917$, with $p = .293$. Thus, $P > .05$, which indicates there is no statistically significant

association with delivery performance. The Cramer's V of 0.293 suggests a medium-to-strong effect size. The degrees of freedom differ from 2024, likely due to changes in data categories.

- **Recurring Item Lead Time:** The analysis for recurring item lead time demonstrates a no significant association: $\chi^2 = 340.765$, with $p = .475$ which is $> .001$. The Cramer's V of 0.475 indicates a large effect size, signifying a very strong relationship with delivery performance.
- **Fixed Asset Requisition Quantity:** The test for fixed asset requisition quantity in 2025 resulted in $\chi^2 = 0.207$, with $p = .028$. As $p < .05$, there is significant association with delivery performance. The Cramer's V of 0.028 suggests a negligible effect size.
- **Recurring Item Requisition Quantity:** For recurring item requisition quantity, the test produced $\chi^2 = 1.038$, with $p = .026$. Since $p < .05$, there is statistically significant association with delivery performance. But, the Cramer's V of 0.026 reflects a negligible effect size.

3.5 Summary

The research has examined whether lead time and requisition quantity of fixed assets and recurring items impact delivery performance. The research draws records from June-August of 2024 and 2025. The descriptive analysis explains how delivery performance varies for fixed assets and recurring items. It also explains changes in 2024 and 2025. Inferentially, patterns were drawn, and hypotheses were tested. The consolidated results:

H₁: Fixed assets lead time does not significantly impact delivery performance in 2024

H₂: Recurring item lead time does not significantly impact delivery performance 2024

H₃: Fixed asset requisition quantity significantly impacts delivery performance in 2024

H₄: Recurring item requisition quantity does not significantly impact delivery performance in 2024

H₅: Fixed assets lead time does not significantly impact delivery performance in 2025

H₆: Recurring item lead time does not significantly impact delivery performance 2025

H₇: Fixed asset requisition quantity significantly impacts delivery performance in 2025

H₈: Recurring item requisition quantity significantly impacts delivery performance in 2025

3.6 Recommendations/Implications

3.6.1 Practical Implications

- **Tailored Strategies for Item Types:** The results indicate that the impact of lead time and requisition quantity on delivery performance varies significantly between fixed assets and recurring items, and across different years. This strongly implies that a "one-size-fits-all" procurement strategy is inefficient (Roshani et al., 2024). Managers should develop distinct strategies for fixed assets and recurring items. For example, for Fixed assets, management should focus on rigorous lead time management, including supplier collaboration and route optimization. Also, automating routine items among recurring items may be another option.
- **Leveraging Data Analytics:** The year-specific differences observed underscore the value of continuous data collection and analysis. Organizations should regularly analyze their procurement data to detect shifts in these relationships, allowing for timely adjustments to strategies (Alfaqiyah et al., 2025).
- **Performance Management by Item Type:** Segment KPIs and review cadences for fixed assets versus recurring items. Recurring items should focus on on-time-to-request and lead-time standards, while fixed assets should emphasize milestone and pre-shipment readiness (Lücker et al., 2024).
- **Exception Control Towers:** Develop dashboards to flag (a) high lead-time orders entering risk windows, and (b) categories with recurring late delivery variance. Prioritize these for cross-functional huddles involving Procurement, Planning, Logistics, and User Departments.
- **Supplier and Lane Segmentation:** For structurally constrained high lead times (e.g., import lanes, custom specifications), segment suppliers and lanes and impose differentiated contract terms, such as earlier order placement, buffer lead time, dual sourcing, or VMI/consignment for recurring consumables (Rahiminia et al., 2023).

3.6.2 Theoretical Implications

- **Highlighting Contextual Specificity:** The findings reinforce that the relationships between procurement variables (lead time, requisition quantity) and delivery performance are not universal but are context-dependent, varying by type (fixed asset vs. recurring item) and temporal factors (year). This calls for theoretical models that incorporate such moderating variables (Roshani et al., 2024).

- **Differentiating Item Type Effects:** By specifically segmenting analysis for fixed assets and recurring items, the research provides empirical evidence that these categories behave differently, urging future theoretical development to move beyond generalized models of procurement.
- **Emphasizing Dynamic Relationships:** The year-to-year variability in the significance of some relationships suggests that theoretical frameworks should account for the dynamic nature of supply chain environments, possibly integrating concepts of supply chain resilience and adaptability (Alfaqiyah et al., 2025; Lückert et al., 2024).
- **Advanced Modeling Implications:** While median splits offer straightforward chi-square analyses, future research should model lead time and quantity on their original scales (e.g., multinomial/ordinal logistic regression) and include covariates such as category, local vs. import, and supplier tier. This approach reduces information loss due to dichotomization and allows rigorous inference (Gabriel et al., 2022).

3.6.3 Limitations

- **Scope of Variables:** This research focused on lead time and requisition quantity. Other factors (e.g., supplier reliability, demand volatility, transportation issues, inventory management practices, communication channels) also influence delivery performance but were not within the scope of this analysis.
- **Categorization of Continuous Variables:** The categorization of lead time and requisition quantity into "low" and "high" based on medians may simplify the complexity of these continuous variables and could potentially obscure more nuanced relationships (Gabriel et al., 2022; Naggara et al., 2011).
- **Generalizability:** The findings are based on data from a specific context (organization, industry, years) and may not be directly generalizable to all supply chain environments without further validation.

3.6.4 Future Research

- **Investigate Moderating Factors:** Future studies could explore why the impact of certain predictors (e.g., fixed asset lead time, requisition quantity) is significant in one year but not another. Potential moderators could include economic conditions, changes in supplier base, implementation of new technologies, or internal policy shifts.

- **Longitudinal Studies:** A more extensive longitudinal study covering a longer period could provide deeper insights into the stability and evolution of these relationships over time, helping to distinguish between temporary fluctuations and long-term trends.
- **Incorporate Additional Variables:** Expanding the conceptual framework to include additional variables known to influence delivery performance, such as supplier relationship quality, demand uncertainty, and logistics infrastructure, could offer a more holistic understanding.
- **Advanced Analytical Techniques:** Utilizing more advanced statistical methods (e.g., regression analysis, structural equation modeling) that can handle continuous variables, and complex interrelationships could provide a more detailed understanding of the magnitude and direction of impacts.
- **Qualitative Exploration:** Qualitative research (e.g., interviews with procurement managers) could provide rich contextual information to explain the "why" behind the statistical associations and inconsistencies observed.

Conclusion

This report quantifiably measured the impact of lead time and requisition quantity on the delivery performance of fixed assets and recurring items within Aarong's procurement operations for the years 2024 and 2025. The impact suggests that lead time and requisition quantity do not have much impact on delivery outcomes. Yet, organizations can specially make the best use of lead time through supplier collaboration, strong connection, leveraging data analytics for continuous monitoring, and implementing useful practices such as just-in-time or automated procurement that can largely improve delivery outcomes (Tetteh et al., 2025). Theoretically, this research provides a credible framework to analyze the relationship between procurement variables and delivery performance. Which is part of how the process within supply chain dynamics work. The research also can be a direction for future studies. Researchers are recommended to conduct longitudinal studies over a more extended period to identify broader trends and patterns. Cross-industry or cross-company analyses could be useful to find the generalizability of these, which can be helpful for other sectors. Furthermore, future research could influence more advanced supply chain modeling to explore the interaction effects of other variables, such as supplier reliability, market volatility, and technological integration for organizations (Paul & Saha, 2025). In conclusion, a strong procurement management requires dynamic, data-driven approaches that considers item characteristics and

temporal variations. With such change, procurement enables itself to streamline processes and help the organization.

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