International Journal of Scientific and Management Research
Volume 8 Issue 10 (October) 2025
ISSN: 2581-6888
Page: 182-190

Analysis of Miyako Product Inventory Control using ABC Analysis Method at Aneka Jaya Retail Store, Jember

Eka Bambang Gusminto[1], Aldo Pratama[2], Handriyono[3], & Fenza Gusti Naufal Paleva[4*]
[1,2,3] Management Department, Economy and Business Faculty, University of Jember, Indonesia,
[4] Business Administration Department, Faculty of Social and Political Sciences, University of Nusa Cendana, **Indonesia**
DOI - http://doi.org/10.37502/IJSMR.2025.81014

Abstract

Objectives: This study aims to explore the Analysis of Miyako Product Inventory Control using ABC Analysis Method at Aneka Jaya Retail Store, Jember
Methodology: The research used is descriptive quantitative. The results presented in this study are ABC analysis results, which are then calculated using EOQ, ROP, and Safety Stock as recommendations for inventory control at Toko Aneka Jaya.
Findings: The study found of this study confirm that demand variability and lead time are critical factors in determining safety stock and ROP. Products with high and fluctuating demand require larger safety stocks, while stable products like the MIYAKO 1-ton stove kg-101C 143* only require one unit. This strategy not only reduces the risk of stockouts but also strengthens Aneka Jaya's reputation as a reliable electronics supplier.
Conclusion: Based on the analysis and discussion, it can be concluded that Aneka Jaya, an electronics retail MSME in Jember, has implemented several inventory management methods to optimize its business operations. The ABC analysis classifies Miyako products into three priority groups (A, B, and C), with group A contributing 71.1% of the total annual investment value, thus requiring close monitoring. The EOQ method produces optimal order quantities that minimize costs, such as 2,659 units for the MIYAKO1.8 magicwarmer mcm-508sbc 86* product, while the safety stock calculation (220 units) and reorder point (320 units) ensure stock availability despite fluctuations in demand. The implementation of these three methods demonstrates Aneka Jaya's efforts to balance cost efficiency and customer satisfaction.

Keywords: Strategy, ABC Analysis, Safety Stock, EOQ, ROP

1. Introduction

Micro, small, and medium enterprises (MSMEs) are businesses run by individuals, groups, business entities, or Indonesian households (Vinatra, 2023). MSMEs contribute to reducing unemployment in Indonesia and help increase regional and national revenues (Karya Abdi et al., 2021). According to data from the Ministry of Cooperatives and SMEs, in 2024, there were 65 million MSMEs registered in various sectors, including the retail industry. According to DataIndonesia.id, the number of retail businesses reached 3.98 million, growing by 5.3% in 2023. The development of MSMEs in the retail sector is accompanied by several challenges, including inventory. MSMEs often experience several obstacles, particularly limited capital,

which impacts business development (Putri S., 2021). This shows that MSMEs must be able to effectively manage their budgets, especially inventory, to maximize profits (Bunfa L et al., 2023). Lack of inventory will result in lost potential revenue for the company, and excess inventory will result in additional costs. Operational managers worldwide have long recognized the importance of good inventory management, including in the retail industry (Heizer et al., 2020, 522; Sandora et al., 2023).

Data from the Jember Trade and Industry Office and the Jember Regency Statistics Agency (BPS) in 2024 recorded that there were more than 8,600 MSMEs operating. Many MSMEs are particularly in the retail industry, and approximately 30% of retail businesses in Jember experience similar problems, indicating the need for further research on inventory management (Luswiantini et al., 2023). One such MSME in Jember is Aneka Jaya, whose shop initially sold electronic goods and has been operating since 1998 is an example of a MSME experiencing rapid growth.

Over time, the Aneka Jaya store has sold a variety of electronic equipment, including Miyako brand products, which dominate the product mix, accounting for 40% of sales. According to the Aneka Jaya store manager, Miyako products are in high demand in the market, resulting in several types of products available in various styles. Miyako products remain the primary electronic product choice for customers at the Aneka Jaya store.With the continued growth of Aneka Jaya's business line, its target market has expanded to various surrounding areas, including Banyuwangi, Bondowoso, Situbondo, and Lumajang. However, despite its significant potential, Aneka Jaya still faces challenges in inventory management, which often results in shortages and excess stock, negatively impacting sales and operating costs. Therefore, it is crucial for Aneka Jaya to maintain inventory control.

The methods used in this research include Always Better Control (ABC), Economic Order Quantity (EOQ), Safety Stock, and Reorder Point (ROP) analysis. ABC analysis allows for grouping of items based on their value and frequency of use, thus facilitating inventory control (Heizer & Barry Render, 2020; 523). Research by Nirmal et al. (2022) showed that implementing the ABC method can reduce inventory costs by up to 20% in retail companies. Meanwhile, the EOQ method helps determine the optimal order quantity to minimize total inventory costs, including ordering and holding costs (Kurnia Indah et al., 2023; Kurniawan & Ismiyah, 2024). ROP determines the point at which reorders should be placed to maintain smooth operations, while safety stock serves as a reserve to avoid stockouts (Magfirah et al., 2023). Based on this background, the researcher attempted to control Miyako product inventory at the Aneka Jaya store to avoid understocking and overstocking, which could result in unnecessary costs.

2. Theoretical Framework and Conceptual ABC (Always Better Control) Analysis Strategy

ABC (Always Better Control) Analysis strategy is a comprehensive plan that outlines

ABC analysis divides existing inventory into three classifications based on annual monetary value (Heizer & Barry Render, 2020; 523). The application of ABC analysis is known as the Pareto principle, named after a 19th-century Italian economist (Heizer & Barry Render, 2020; 523). Based on Pareto's principle, ABC analysis can classify items based on their value ranking from highest to lowest, and then divide them into main priority classes, usually named A, B,

C, and so on, in order from highest to lowest (Asana et al., 2020). Therefore, when dealing with a wide variety of products, a good first step is to classify them using ABC analysis (Resista Vikaliana et al., 2020).

ABC analysis focuses on high-value products or goods, with an inventory policy that focuses resources on a few critical inventory items rather than many less important ones (Heizer & Barry Render, 2020). There are three classification groups: Group A, with an annual rupiah value reaching 70% of the total inventory value, Group B with an annual rupiah value of 20%, and Group C with an annual rupiah value of 10% (Heizer & Barry Render, 2020; 523). The annual rupiah value in question is the inventory volume in a period multiplied by the price per unit. By classifying these products, the most effective inventory control strategy for each product type can be determined (Heizer & Barry Render, 2020; 523).

Economic Order Quantity (EOQ)

According to Yani (2023), one of the keys to inventory management is optimizing the procurement process. Obtaining the required goods, when, and in the right quantities significantly impacts the overall efficiency of the inventory system (Yani, 2023). The EOQ method is used to avoid the risk of stockouts and excess inventory, thereby minimizing a company's inventory costs (Sholehah et al., 2021).

Safety Stock (SS)

According to Nurcahyawati et al., (2023), safety stock is additional inventory prepared to guard against the possibility of shortages. Hanssen Irawan Tarunokusumo & I Wayan Sukania, (2021) also state that safety stock is reserve inventory held to mitigate the impact of fluctuations, uncertainties, and factors beyond the company's control related to demand levels, lead times, and various other factors not covered by the EOQ (Sholehah R. et al., 2021).By maintaining safety stock, companies can ensure product availability for customers despite fluctuations in demand, delays in supplier deliveries, or increases in supplier purchase prices (Barros et al., 2021).

Reorder Point (ROP)

The decision on when to order goods is expressed in terms of a reorder point, with the inventory level at which the order should be placed called the Reorder Point (ROP) (Heizer & Barry Render, 2020; 533). According to Sholehah et al. (2021), ROP occurs when the amount of inventory in stock continues to decrease, so we determine the minimum inventory level to consider to avoid inventory shortages. The use of ROP is necessary to address the assumptions of fixed data and safety stock, which are not accounted for by the EOQ (Reza Pratama M et al., 2022).

3. Method

The type of research used is descriptive quantitative. According to Aziza (2023), descriptive quantitative research is a method that helps describe, show, or summarize data in a constructive manner, referring to statistical descriptions that help understand data details by summarizing and identifying patterns from specific data samples. In this study, the results presented are ABC analysis results, which are then calculated using EOQ, ROP, and Safety Stock as recommendations for inventory control at the Aneka Jaya Store.

The data used in this study comprises primary and secondary data. According to Smith & Brown (2023), primary data is information collected directly from research subjects through observation, interviews, surveys, or internal operational systems such as transaction data, inventory, or sales records. Secondary data, on the other hand, is information collected by another party for a different purpose and then reused for a different research purpose (Johnston, M.P. 2020). Modern research emphasizes the combination of primary and secondary data to increase the depth of analysis (Nurmala et al., 2023). Direct data sources provide researchers with information in the form of historical data, which they then process. Data sources are obtained directly from store managers and subordinate divisions, including product quantity, demand, purchase price, selling price, and stock levels for each period.

Data analysis was conducted after all the necessary information was collected. In this study, the data was analyzed and processed using ABC analysis. After each product was identified, it was followed up with the EOQ method to obtain results regarding inventory optimization, including optimal order quantities, safety stock levels, and retail product repurchase points (ROP), which would impact cost efficiency.

4. Result and Discussion

ABC (Always Better Control) Analysis

Table 1. ABC Analysis Result (Class A)

Code	Item	Annual Volume (Unit)	Price (Rp)	Annual Volume (Rp)	Cumulative Value	Mark Cumulative (%)	Class
co201	MIYAKO1.8 magicwarmer mcm-508sbc 86*	3269	Rp 234,470	Rp766,482,430	0.066456524	6.6%	A
mi026	MIYAKO hand mixer hm-620 86*	4025	Rp 155,635	Rp626,430,875	0.054313598	12.1%	A
M.037	MIYAKO1.8 magicwarmer mcm-528 86*	2991	Rp 216,342	Rp647,078,922	0.056103851	17.7%	A
co099	MIYAKO1.8 magicwarmer mcm-18BH B 86*	1895	Rp 276,045	Rp523,105,275	0.045354932	22.2%	A
MI159	MIYAKO1.8 magicwarmer mcm-558sbc 143*	2140	Rp 244,427	Rp523,073,780	0.045352201	26.8%	A
MI085	MIYAKO1.8 magicwarmer mcm-528ts 86*	2226	Rp 210,270	Rp468,061,020	0.040582416	30.8%	A
MI148	MIYAKO1.8 magicwarmer mcm-507sbc 143*	1838	Rp 239,418	Rp440,050,284	0.038153794	34.6%	A
M.084	MIYAKO1.8 magicwarmer mcm-509 86*	1929	Rp 216,172	Rp416,995,788	0.036154894	38.2%	A
MI084	MIYAKO1.2 magicwarmer mcm-512csbc 143*	1922	Rp 212,612	Rp408,640,264	0.035430442	41.8%	A
MI076	MIYAKO1.8 magicwarmer mcm-559sbc 143*	1640	Rp 247,973	Rp406,675,720	0.03526011	45.3%	A
MI011	MIYAKO1.8 magicwarmer mcm-586sbc 86*	1621	Rp 248,420	Rp402,688,820	0.034914433	48.8%	A
M.040	MIYAKO1.2 magicwarmer mcm-612 86*	1867	Rp 203,947	Rp380,769,049	0.033013917	52.1%	A
M.039	MIYAKO1.8 magic warmer mcm-508 86*	1755	Rp 216,287	Rp379,583,685	0.032911142	55.4%	A
MI324	MIYAKO blender bl-101PL 86*	2013	Rp 172,865	Rp347,977,194	0.030170757	58.4%	A
M.036	MIYAKO0.6 magicwarmer mcm-606A 86*	1618	Rp 189,604	Rp306,779,272	0.026598763	61.1%	A
bl026	MIYAKO blender bl-102GS 86*	1048	Rp 262,722	Rp275,332,774	0.023872249	63.5%	A
bl022	MIYAKO blender bl-101GS 86*	1006	Rp 234,393	Rp235,799,218	0.020444561	65.5%	A
MI078	MIYAKO1.2 magicwarmer mcm-512cbh 143*	929	Rp 246,954	Rp229,420,266	0.019891485	67.5%	A
MI149	MIYAKO1.8 magicwarmer mcm-586bh 86*	758	Rp 288,419	Rp218,621,602	0.018955205	69.4%	A
co023	MIYAKO2.2 magicwarmer mcm-838 86*	829	Rp 256,920	Rp212,986,680	0.018466639	71.2%	A

Based on the ABC analysis, three classification groups were identified for Miyako products: Class A, B, and C. Each group has been identified in the analysis results subsection. Product Group A has the largest annual volume of 37,317 units, representing 71.1% of the total, and an annual rupiah volume of Rp8,216,552,918. These results indicate that product Group A has the highest priority in the procurement system, especially since its average demand fluctuates significantly each month. This also makes it important to monitor inventory in Group A due to its higher investment value compared to products in Groups B and C.

Table 2. ABC Analysis Result (Class B)

MI101	MIYAKO0.6 magicwarmer mcm-606BSBC 86*	1012	Rp	203,972	Rp206,419,664	0.017897258	73.0%	B
M.047	MIYAKO1.8 magicwarmer mcm-508 btk wyg 143*	825	Rp	226,596	Rp186,941,700	0.016208455	74.7%	B
MI006	MIYAKO3 magicwarmer mcm-751sbc 86*	410	Rp	401,304	Rp164,534,640	0.014265689	76.1%	B
bl025	MIYAKO blender bl 102PL 86*	767	Rp	207,378	Rp159,058,887	0.013790924	77.5%	B
M.048	MIYAKO1.8 magicwarmer mcm-638 86*	748	Rp	197,000	Rp147,356,000	0.012776245	78.7%	B
MI074	MIYAKO1.8 magicwarmer mcm-516 143*	599	Rp	238,467	Rp142,841,733	0.012384844	80.0%	B
MI215	MIYAKO slowcooker sc-630 86*	706	Rp	189,598	Rp133,856,188	0.011605768	81.1%	B
MI202	MIYAKO chopper ch-208ma 143*	327	Rp	389,329	Rp127,310,641	0.011038247	82.2%	B
ma001	MIYAKO0.6 magicwarmer mcm-609 86*	683	Rp	187,455	Rp128,031,765	0.011100771	83.3%	B
co193	MIYAKO1 magicwarmer mcm-610 86*	496	Rp	193,322	Rp95,887,712	0.008313777	84.2%	B
ma032	MIYAKO jar 7lt mj-709ep 143*	370	Rp	240,622	Rp89,030,140	0.007719203	85.0%	B
co027	MIYAKO1.8 magicwarmer mcm-507 143*	386	Rp	225,426	Rp87,014,436	0.007544435	85.7%	B
MI088	MIYAKO standfan kas-1606x pl 198*	456	Rp	189,973	Rp86,627,688	0.007510903	86.5%	B
MI039	MIYAKO kompor 2tk 202se 189*	240	Rp	271,637	Rp65,192,880	0.005652435	87.0%	B
MI018	MIYAKO1.8 magicwarmer mcm-586 86*	274	Rp	233,452	Rp63,965,848	0.005546047	87.6%	B
bl038	MIYAKO blender bl-152pf/ap 86*	310	Rp	259,297	Rp80,382,004	0.006969382	88.3%	B
wa030	wallfan miyako kaw-1262gb 143*	288	Rp	223,704	Rp64,426,663	0.005586002	88.8%	B
wa033	wallfan miyako kaw-1662pl 143*	273	Rp	223,678	Rp61,064,137	0.00529446	89.4%	B
co048	MIYAKO0.6 magicwarmer mcm-606B 86*	294	Rp	195,432	Rp57,457,008	0.00498171	89.9%	B
di031	MIIYAKO dispenser wd 190ph 143*	334	Rp	154,266	Rp51,524,844	0.004467372	90.3%	B
MI102	MIYAKO1.8 magicwarmer mcm-509ts 86*	253	Rp	210,816	Rp53,336,448	0.004624444	90.8%	B
wa056	wallfan miyako kaw-1662gb 143*	223	Rp	236,977	Rp52,845,810	0.004581904	91.2%	B

This contrasts with product groups B and C, where Product B has 10,274 units, representing 19.6% of total demand over 12 months. Product Group B is a medium priority group, with a priority level below Group A and above Group C. The average demand for Product B is relatively more stable compared to the other groups, where the demand does not fluctuate significantly.

Table 3. ABC Analysis Result (Class C)

di028	MIYAKO dispenser wd185h 143*	438	Rp	114,205	Rp50,021,681	0.004337043	91.7%	C
MI124	MIYAKO standfan kas-1607gb 143*	193	Rp	222,055	Rp42,856,687	0.003715814	92.0%	C
bl028	MIYAKO blender bSSl-152gf 143*	181	Rp	278,310	Rp50,374,070	0.004367596	92.5%	C
st595	MIYAKO standfan kas-1618kb 143*	169	Rp	258,635	Rp43,709,315	0.00378974	92.8%	C
MI221	MIYAKO chopper ch-012ma 143*	153	Rp	262,302	Rp40,132,168	0.00347959	93.2%	C
se369	MIYAKO setrika 1008M 143*	443	Rp	94,086	Rp41,679,877	0.003613781	93.6%	C
ma031	MIYAKO ricecooker0.6 psg607 143*	221	Rp	155,961	Rp34,467,381	0.002988434	93.9%	C
ma020	MIYAKO magicwarmer mcg171 143*	27	Rp	1,216,500	Rp32,845,500	0.002847812	94.1%	C
MI161	MIYAKO standfan kas-1618bgb 143*	168	Rp	215,939	Rp36,277,668	0.003145392	94.5%	C
MI190	MIYAKO low carbo mcm-721st	84	Rp	350,988	Rp29,482,992	0.002556271	94.7%	C
st056	MIYAKO standfan kas-1607kpl 143*	98	Rp	275,874	Rp27,035,652	0.002344079	94.9%	C
wa078	wallfan miyako kaw-1689rc pl 143*	87	Rp	278,045	Rp24,189,898	0.002097343	95.2%	C
MI174	MIYAKO deskfan kad-927bgb 143*	181	Rp	147,054	Rp26,616,804	0.002307764	95.4%	C
MI125	MIYAKO kompor 1tk kg-101C wyg 143*	157	Rp	150,236	Rp23,587,052	0.002045074	95.6%	C

Meanwhile, Group C had the lowest demand, at 4,869 units, with an annual volume of Rp 1,011,932,134. The percentage of product group C was 8.8%, making it the lowest priority for product procurement and inventory monitoring. Thus, it is known that product group A has the highest priority, product group B has medium or intermediate priority, and product group C has the lowest priority and the lowest investment value. This analysis can help Aneka Jaya determine the priority scale for allocating its capital for product inventory, from the highest to the lowest class.

Economic Order Quantity (EOQ) Method

Table 4. EOQ Method Calculation Result

Code	Item	Total Request / Year	Shipping Cost	Storage Cost	Unit Cost	Optimal Order Quantity	Booking Frequency	Booking Hose
co201	MIYAKO1.8 magicwarmer mcm-508sbc 86*	3269	Rp 4,000,000	Rp 3,700	Rp 234,470	2659	1	312
mi026	MIYAKO hand mixer hm-620 86*	4025	Rp 666,667	Rp 3,700	Rp 155,635	1204	3	104
M.037	MIYAKO1.8 magicwarmer mcm-528 86*	2991	Rp 4,000,000	Rp 3,700	Rp 216,342	2543	1	312
co099	MIYAKO1.8 magicwarmer mcm-18BH B 86*	1895	Rp 4,000,000	Rp 3,700	Rp 276,045	2024	1	312
MI159	MIYAKO1.8 magicwarmer mcm-558sbc 143*	2140	Rp 4,000,000	Rp 3,700	Rp 244,427	2151	1	312
MI085	MIYAKO1.8 magicwarmer mcm-528ts 86*	2226	Rp 4,000,000	Rp 3,700	Rp 210,270	2194	1	312
MI148	MIYAKO1.8 magicwarmer mcm-507sbc 143*	1838	Rp 4,000,000	Rp 3,700	Rp 239,418	1994	1	312
M.084	MIYAKO1.8 magicwarmer mcm-509 86*	1929	Rp 4,000,000	Rp 3,700	Rp 216,172	2042	1	312
MI084	MIYAKO1.2 magicwarmer mcm-512csbc 143*	1922	Rp 4,000,000	Rp 3,700	Rp 212,612	2039	1	312
MI076	MIYAKO1.8 magicwarmer mcm-559sbc 143*	1640	Rp 4,000,000	Rp 3,700	Rp 247,973	1883	1	312
MI011	MIYAKO1.8 magicwarmer mcm-586sbc 86*	1621	Rp 4,000,000	Rp 3,700	Rp 248,420	1872	1	312
M.040	MIYAKO1.2 magicwarmer mcm-612 86*	1867	Rp 4,000,000	Rp 3,700	Rp 203,947	2009	1	312
M.039	MIYAKO1.8 magic warmer mcm-508 86*	1755	Rp 4,000,000	Rp 3,700	Rp 216,287	1948	1	312
MI324	MIYAKO blender bl-101PL 86*	2013	Rp 666,667	Rp 3,700	Rp 172,865	852	2	156
M.036	MIYAKO0.6 magicwarmer mcm-606A 86*	1618	Rp 4,000,000	Rp 3,700	Rp 189,604	1870	1	312
bl026	MIYAKO blender bl-102GS 86*	1048	Rp 666,667	Rp 3,700	Rp 262,722	615	2	156
bl022	MIYAKO blender bl-101GS 86*	1006	Rp 666,667	Rp 3,700	Rp 234,393	602	2	156
MI078	MIYAKO1.2 magicwarmer mcm-512cbh 143*	929	Rp 4,000,000	Rp 3,700	Rp 246,954	1417	1	312
MI149	MIYAKO1.8 magicwarmer mcm-586bh 86*	758	Rp 4,000,000	Rp 3,700	Rp 288,419	1280	1	312
co023	MIYAKO2.2 magicwarmer mcm-838 86*	829	Rp 4,000,000	Rp 3,700	Rp 256,920	1339	1	312
MI101	MIYAKO0.6 magicwarmer mcm-606BSBC 86*	1012	Rp 4,000,000	Rp 3,700	Rp 203,972	1479	1	312

Based on the EOQ calculation results for the Miyako product type MIYAKO1.8 magic warmer mcm-508sbc 86* with code co201, 2,659 units are ordered in a single order to meet the annual demand of 3,629 units. Meanwhile, the low-demand product, *MIYAKO blender bl-301plw 143**, has an EOQ of only 223 units. The EOQ calculation results for the majority of products are large enough that a single order is placed. This allows the company to store products in the warehouse, saving shipping costs. EOQ helps reduce costs by balancing order quantity and frequency, allowing Aneka Jaya to optimize shipping costs.

Safety Stock Method

Table 5. Safety Stock Calculation Result

Code	Item	Deman Rate												Lead time (Day)	Deviation Standard	Safety Stock
		May	June	July	August	September	October	November	December	January	February	March	April			
co201	MIYAKO1.8 magicwarmer mcm-508sbc 86*	414	349	228	209	258	242	240	248	280	253	416	132	10	82.82123	220
mi026	MIYAKO hand mixer hm-620 86*	312	338	351	312	337	380	354	329	394	415	430	73	10	91.1028	242
M.037	MIYAKO1.8 magicwarmer mcm-528 86*	350	41	167	228	302	287	365	370	280	368	230	3	10	123.9422	330
co099	MIYAKO1.8 magicwarmer mcm-18BH B 86*	209	124	142	192	153	118	168	167	113	189	148	172	10	30.53599	81
MI159	MIYAKO1.8 magicwarmer mcm-558sbc 143*	202	182	229	152	190	267	201	244	187	98	87	101	10	58.39417	155
MI085	MIYAKO1.8 magicwarmer mcm-528ts 86*	181	214	205	161	161	211	223	195	126	161	264	124	10	41.17038	110
MI148	MIYAKO1.8 magicwarmer mcm-507sbc 143*	204	125	112	158	176	204	195	150	156	108	120	130	10	35.22095	94
M.084	MIYAKO1.8 magicwarmer mcm-509 86*	212	192	122	195	112	150	119	128	118	192	222	167	10	40.65403	108
MI084	MIYAKO1.2 magicwarmer mcm-512csbc 143*	176	191	198	196	176	193	184	143	167	24	246	28	10	67.10349	179
MI076	MIYAKO1.8 magicwarmer mcm-559sbc 143*	187	122	222	216	189	99	102	79	140	47	134	103	10	55.75977	148
MI011	MIYAKO1.8 magicwarmer mcm-586sbc 86*	154	95	172	156	193	174	95	185	184	62	82	69	10	50.13701	133
M.040	MIYAKO1.2 magicwarmer mcm-612 86*	132	96	78	158	110	184	254	111	197	256	265	26	10	77.02002	205
M.039	MIYAKO1.8 magic warmer mcm-508 86*	191	138	129	188	187	189	124	204	163	145	70	27	10	53.72172	143
MI324	MIYAKO blender bl-101PL 86*	208	183	140	174	162	216	181	134	195	158	141	121	10	30.26587	81
M.036	MIYAKO0.6 magicwarmer mcm-606A 86*	123	167	139	181	160	165	109	141	103	162	0	168	10	49.1784	131

Based on the calculation using the safety stock method, the Miyako product MIYAKO1.8 Magic warmer MCM-508SBC 86* has a total of 220 units, while stable items with low demand, such as the MIYAKO 1-ton stove kg-101C 143, only require 1 unit of safety stock. The standard deviation of demand and lead time (10 days) are key factors in the calculation. A high safety stock is necessary for items with high demand variability. Therefore, the safety stock calculation result is used to secure demand that previously could not be met because Aneka Jaya never had safety stock.

Reorder Point Method

Table 6. ROP Calculation Method

Code	Item	Average Request / Months	Request / Day	Lead Time	Safety Stock	ROP
co201	MIYAKO1.8 magicwarmer mcm-508sbc 86*	272	10	10	220	320
mi026	MIYAKO hand mixer hm-620 86*	335	13	10	242	372
M.037	MIYAKO1.8 magicwarmer mcm-528 86*	249	10	10	330	430
co099	MIYAKO1.8 magicwarmer mcm-18BH B 86*	158	6	10	81	141
MI159	MIYAKO1.8 magicwarmer mcm-558sbc 143*	178	7	10	155	225
MI085	MIYAKO1.8 magicwarmer mcm-528ts 86*	186	7	10	110	180
MI148	MIYAKO1.8 magicwarmer mcm-507sbc 143*	153	6	10	94	154
M.084	MIYAKO1.8 magicwarmer mcm-509 86*	161	6	10	108	168
MI084	MIYAKO1.2 magicwarmer mcm-512csbc 143*	160	6	10	179	239
MI076	MIYAKO1.8 magicwarmer mcm-559sbc 143*	137	5	10	148	198
MI011	MIYAKO1.8 magicwarmer mcm-586sbc 86*	135	5	10	133	183
M.040	MIYAKO1.2 magicwarmer mcm-612 86*	156	6	10	205	265
M.039	MIYAKO1.8 magic warmer mcm-508 86*	146	6	10	143	203
MI324	MIYAKO blender bl-101PL 86*	168	6	10	81	141

Based on the ROP calculation, the MIYAKO 1-ton stove kg-101C 143* has a total of 320 units. This figure indicates that with a remaining inventory of 320 units, Aneka Jaya can place 25 orders with suppliers. Assuming a 10-day lead time, the remaining 320 units can meet demand, ensuring product availability.ROP is necessary so Aneka Jaya can place new orders to maintain inventory levels and continue to serve all existing demand. By using ROP, Aneka Jaya's stock shortage problem can be resolved, preventing stockouts.

5. Conclusion

Based on the analysis and discussion, it can be concluded that Aneka Jaya, an electronics retail MSME in Jember, has implemented several inventory management methods to optimize its business operations. ABC analysis classifies Miyako products into three priority groups (A, B, and C), with group A contributing 71.1% of the total annual investment value, thus requiring close monitoring. The EOQ method produces optimal order quantities that minimize costs, such as 2,659 units for the MIYAKO1.8 magicwarmer mcm-508sbc 86* product. While the safety stock (220 units) and reorder point (320 units) calculations ensure stock availability despite fluctuations in demand.

The implementation of these three methods demonstrates Aneka Jaya's efforts to balance cost efficiency and customer satisfaction. Furthermore, the findings of this study confirm that

demand variability and lead time are critical factors in determining safety stock and ROP. Products with high and fluctuating demand require larger safety stocks, while stable products like the MIYAKO 1-ton stove kg-101C 143* only require one unit. This strategy not only reduces the risk of stockouts but also strengthens Aneka Jaya's reputation as a reliable electronics provider. Going forward, this data-driven approach can serve as a benchmark for the company to expand its distribution network while maintaining its competitiveness in the electronics retail market.s.

Acknowledgements

The author would like to express sincere gratitude to all individuals and institutions that contributed to the completion of this research. Special thanks are extended to the supervisors Aneka Jaya Store and academic advisors for their invaluable guidance, feedback, and encouragement throughout the study. Appreciation is also given to the respondents and participating organizations for their time and willingness to provide the data necessary for this research. Without their cooperation, this study would not have been possible. Lastly, heartfelt thanks to family, friends, and colleagues for their continuous support and motivation during the research process.

References

1) Annisa, A. R., Astari, C., & Samsi, A. S. (2023). Pengendalian Persediaan Obat Antibiotik Berdasarkan Metode Analisis Activity Based Costing (ABC), Economic Order Quanity (EOQ), dan Reorder Point (ROP) di Instalasi Farmasi RS “X” Kota Palopo Tahun 2022. Jurnal Surya Medika, 9(3). https://doi.org/10.33084/jsm.v9i3.6459 Asana, I. M. D. P.,
2) Radhitya, M. L., Widiartha, K. K., Santika, P. P., & Wiguna, I. K. A. G. (2020). Inventory control using ABC and min-max analysis on retail management information system. Journal of Physics: Conference Series, 1469(1). https://doi.org/10.1088/1742-6596/1469/1/012097
3) Aziza, N. (2023). Metodologi penelitian 1 : deskriptif kuantitatif. ResearchGate, July. Barros, J., Cortez, P., & Carvalho, M. S. (2021). A systematic literature review about dimensioning safety stock under uncertainties and risks in the procurement process. In Operations Research Perspectives (Vol. 8). Elsevier Ltd. https://doi.org/10.1016/j.orp.2021.100192
4) Bunfa L, Rakhman A, Fuad M. (2023). Sosialisasi Pengelolaan Manajemen Persediaan pada UMKM. SANISKALA: Jurnal Pengabdian Masyarakat Vol. 1 No. 2, November 2023, Hal. 53-57 Chandra, A., Kristina, H. J., & . A. (2022). ANALISIS PENGENDALIAN PERSEDIAAN BAHAN BAKU AKRILIK MENGGUNAKAN METODE EOQ PROBABILISTIK DAN SIMULASI MONTE CARLO PADA PT. XYZ. Jurnal Mitra Teknik Industri, 1(1). https://doi.org/10.24912/jmti.v1i1.18750
5) Darmawan N. W, Peranginangin J. M, Herowati R. (2021). Analisis Pengendalian Persediaan Obat BPJS Kategori A(Always) Dan E (Esensial) Dengan Menggunakan Metode ABC, VEN Dan EOQ Di IFRS Bhayangkara Tingkat III Nganjuk. JPSCR: Journal of Pharmaceutical Science and Clinical Research, 2021, 01, 20-32
6) Fadhallah, R. A. (2021). Definisi Wawancara. Wawancara. Fadylla, A. R., & Azizah, F. N. (2023). Pengendalian Persediaan dan Urutan Prioritas Bahan pada Proses Produksi

Flexible Packaging di PT XYZ Berdasarkan Kualifikasi Analisis ABC. Jurnal Serambi Engineering, 8(2). https://doi.org/10.32672/jse.v8i2.5149

7) Fitrotun Nisa, A. (2019). ANALISIS PENGENDALIAN PERSEDIAAN OBAT BERDASARKAN METODE ABC, EOQ DAN ROP (Studi Kasus Pada Gudang Farmasi Rumah Sakit Muhammadiyah Gresik).
8) Heizer, J., Render, B., & Munson, C. (2015). Manajemen Operasi: Manajemen Keberlangsungan dan Rantai Pasokan Edisi 11. Salemba Empat. Heizer, J., Render, B., & Munson, C. (2017). Operations Management: Sustainability & Supply Chain Management (13th ed.).
9) Heizer, Jay., Render, Barry., & Munson, Chuck. (2020). Operations management : sustainability and supply chain management. Pearson.
10) Johnston, M. P. (2020). "Secondary Data Analysis: A Method of which the Time Has Come". Qualitative and Quantitative Methods in Libraries (QQML), 9(3), 541-553.
11) J. Stevenson, W. (2021). Operations Management. Kurnia Indah, T., Surya Darmawan, E., & Oktamianti, P. (2023). STRATEGI PENGENDALIAN PERSEDIAAN DENGAN SEGMENTASI DATA DAN CONTINUOUS REVIEW : SEBUAH LITERATURE REVIEW. Jurnal Kesehatan Tambusai, 4(2). https://doi.org/10.31004/jkt.v4i2.14724
12) Kurniawan, R., & Ismiyah, E. (2024). Analisis Persediaan Bahan Kimia Karl Fisher Solvent Pada PT. XYZ dengan Metode Economic Order Quantity (EOQ) dan Periodic Order Quantity (POQ). G-Tech: Jurnal Teknologi Terapan, 8(4), 2668– 2674. https://doi.org/10.70609/gtech.v8i4.5421
13) Luswiantini, N. N. D., Yoga, I. W. G. S., & Triani, I. G. A. L. (2023). Peramalan Permintaan Dan Pengendalian Persediaan Produk Daging Babi Beku Di PT. XYZ. JURNAL REKAYASA DAN MANAJEMEN AGROINDUSTRI, 11(4). https://doi.org/10.24843/jrma.2023.v11.i04.p15
14) Magfirah, A., Ervianingsih, E., & Samsi, A. S. (2023). Pengendalian Persediaan Obat Generik Berlogo Berdasarkan Analisis Metode ABC, Economic Order Quantity (EOQ), dan Reorder Point (ROP) di Instalasi Farmasi RS “X” Kota Palopo. Jurnal Surya Medika, 9(3). https://doi.org/10.33084/jsm.v9i3.6458
15) Nirmal, A., Ahmad, & Kristina, H. J. (2022). PENGENDALIAN PERSEDIAAN BAHAN BAKU CABAI BUBUK UNTUK MENGELIMINASI STOCKOUT DENGAN SIMULASI MONTE CARLO. Jurnal Mitra Teknik Industri, 1(3). https://doi.org/10.24912/jmti.v1i3.23513
16) Nurcahyawati, V., Riyondha Aprilian Brahmantyo, & Januar Wibowo. (2023). Manajemen Persediaan Menggunakan Metode Safety Stock dan Reorder Point. Jurnal Sains Dan Informatika. https://doi.org/10.34128/jsi.v9i1.431