Business Feasibility Study of Portable Washbin Products for Public Facilities

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Abstract
P.T. Prima Sanitary is a private company located in Marunda, Bekasi City, producing portable washbins for public facilities. Activities carried out by the community during the COVID-19 pandemic require handwashing facilities provided in public places. This research begins with a market survey and conceptualization based on community needs. Based on the demand forecast with the quadratic method, P.T. Prima Sanitary will produce 6 units of product in a day with a selling price of Rp 3,550,000. To support product manufacturing, P.T. Prima Sanitary requires 25 office employees and 25 factory workers. P.T. Prima Sanitary uses a systematic layout planning method in making the layout to ensure the most efficient possible material movement distance. After that, a business feasibility study was carried out, with an initial capital of Rp 2,383,189,000. Then P.T. Prima Sanitary took 3.21 years or sold 9798 units of products to achieve a return on investment. Based on sensitivity analysis, it is not appropriate to run a business when the price of raw material costs increases by 40%, the cost of goods sold increases by 12%, and total revenue decreases by 10%.

Keywords
Portable Washbin, COVID-19, Forecast, Layout, Business

1. Introduction
Daily activities of the community, especially interactions in public places, have the potential to become a means of transmitting COVID-19 (Aprilita et. al. 2021; Joes et.al. 2021). Therefore, the provision of handwashing facilities is one of the absolute conditions for opening public places. Even the DKI Jakarta provincial government has made it mandatory for seven sectors to provide handwashing facilities during the COVID-19 pandemic: households, schools, offices, health facilities, public places, places of worship, and modes of transportation. Facilities in the form of handwashing facilities currently available still use conventional water taps that must be touched by hands so that they can become a means of transmitting the virus. In addition, its unattractive shape makes it unsuitable to be placed in middle-class public places such as malls, hospitals, and schools. Therefore we propose a design of portable washbins for public facilities. This washbin can be used indoors or outdoors; easy to move, has minimal maintenance, and its minimalist shape makes it suitable to be placed in public places. Portable Washbin created by P.T. Prima Sanitary can be seen in Figure 1.

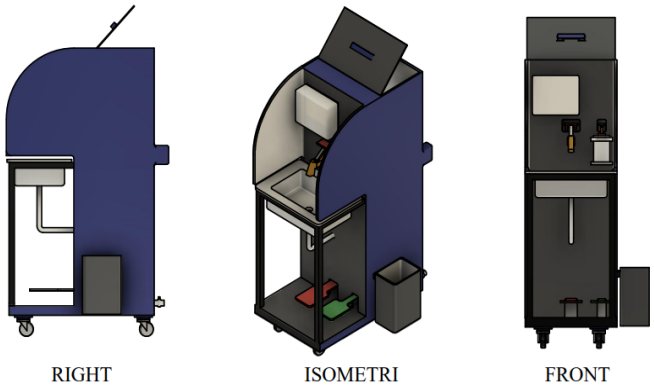


Figure 1. Portable Washbins for Public Facilities

This washbin was designed based on the customer's needs with a questionnaire. Then the design was transformed into a conceptual design. This research is concerned with the existing handwashing facilities and making them better. This research will also focus on technological and financial aspects where a business feasibility study will be carried out to assess whether this business is appropriate. This research aims to design a manufacturing company, which begins with designing a portable washbin product according to the community's needs as a public facility during the pandemic, followed by the company's design. Furthermore, a financial analysis will be carried out to determine whether the products made will generate profits by the number of product requests calculated by forecasting.

2. Literature Review

2.1 Market Research

According to Kotler (2002), market research is the systematic problem analysis, model building, and fact-finding for improved decision and control in marketing goods and services. Market research is fundamental because, in the business world, sellers sell and promote a product and have to ensure that the products being sold are needed and wanted by consumers. Market research was carried out by giving questionnaires to 100 respondents to find out the products needed by the community as public facilities during the pandemic (Basu et. al, 2003).

2.2 Forecasting

According to Jay Heizer and Barry Render (2009: 162), the forecasting method is the art of predicting future events. Forecasting helps make better decisions regarding future business activities. Forecasting can be done by involving historical data and projecting it into the future by using a form of a mathematical model. In the manufacture of portable washbin products, forecasting is used to find out the number of products that must be produced for the next 10 years (Djauhari, 2014).

2.3 Facilities Layout Planning

Factory layout is a procedure for arranging factory facilities effectively and efficiently in the area provided to minimize movement. The layout is a company decision that determines the efficiency of the plant in the long run. A good layout will affect the company's productivity level (Murdifin and Mahfud, 2011). Facility layout planning aims to arrange work areas, such as machinery, warehouses, workbenches, offices, and plant services, to achieve a good and efficient material movement flow. Facility layout planning is used in the manufacture of production floors and offices of P.T. Prima Sanitary to produce an efficient material flow (Arif, 2017; Murnawan et. al, 2018; Sugiyono, 2018).

2.4 Financial Analysis

The Financial Aspect studies how an organization or company can increase, allocate, and use resources over time. The financial aspect is used to assess the company's overall finances. The financial element is used to calculate the risks in running a business. The financial aspect can also provide an overview of the company's profits to determine whether the company is feasible to run in uncertain economic conditions. Financial analysis is used to find out when the company experiences a return on investment and how much profit the company will get for the next 10 years (Maulamin et. al, 2021).

2.5 Business Feasibility Study

Business feasibility studies can also be used to make business decisions. According to Umar (2005), a business feasibility study is a business planning study that analyzes whether or not a business is feasible to build and whether the company is operated regularly to achieve maximum profit for an unlimited time. A business feasibility study can also guide prospective entrepreneurs in avoiding bankruptcy. The business feasibility study has several aspects, including market, technological, managerial, legal, social and environmental, and financial aspects. A business feasibility study is useful to find out whether a company is feasible to establish when faced with several market conditions (Nurmalita et. al, 2018; Sulasih et. al, 2021).

3. Methods

The research began with a survey to determine the community's needs and desires for facilities in public places during the COVID-19 pandemic. The market research results will be tested using validity and reliability tests to determine whether the data obtained are valid. After that, it continued by making product concepts based on the wishes and needs of the community and taking benchmarks from similar products that already exist today. The research was continued by making several design concepts for portable washbin products. After selecting the most suitable product design, the next step is forecasting product demand with the quadratic method to determine the number of products that must be produced for 10 years. After getting the amount of production based on the forecast results, the next step is to conduct a business feasibility study on the product to find out whether this product is feasible to produce. The business feasibility studies carried out cover marketing and financial aspects. On the financial part, the calculation of cash flow, internal rate of return (IRR), payback period (PP), and break-even point (BEP) will be carried out. The flowchart of the method can be seen in Figure 2.

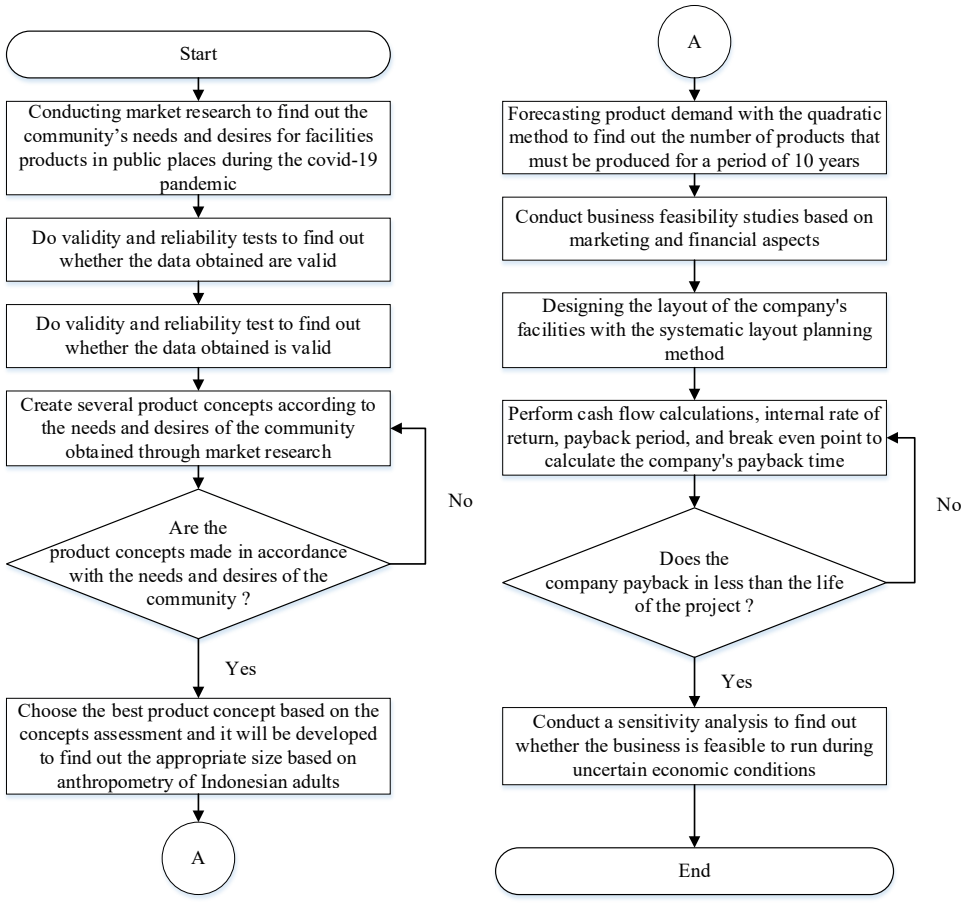


Figure 2. Flowchart of Business Feasibility Study for Portable Washbin Products

4. Data Collection

4.1 Customer's Needs

After surveying 100 respondents, the data was obtained from customer needs and desires for portable washbin products and summarized in a bar chart that can be seen in Figure 3.

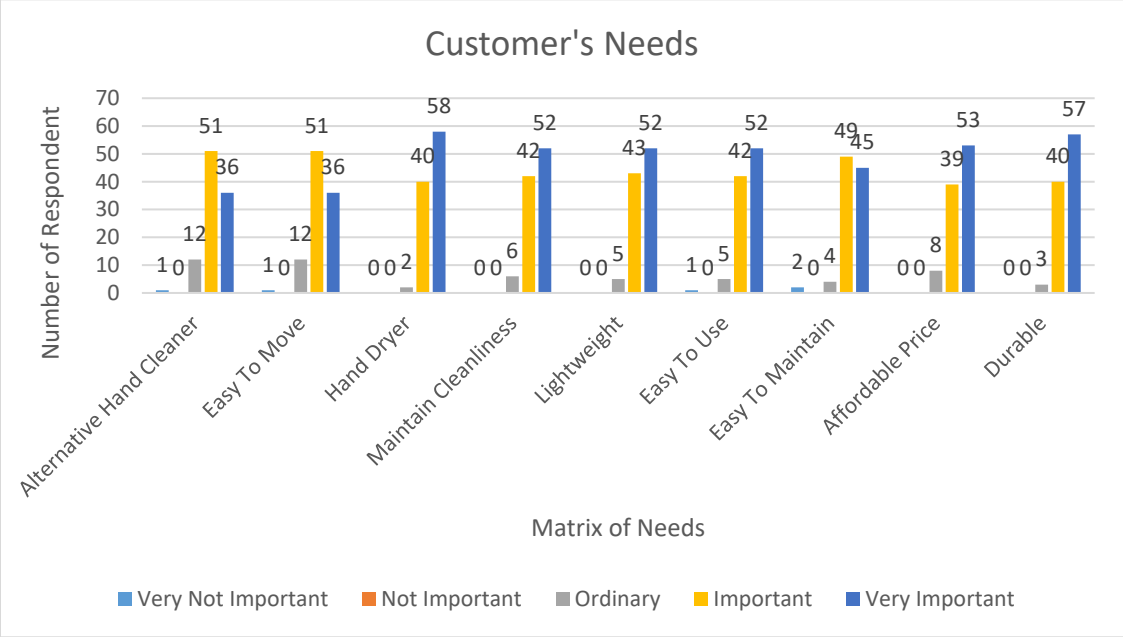


Figure 3. Bar Chart of Customer's Needs from Questionnaire

Figure 3 shows several customers' needs and desires for portable washbin products: alternative hand cleaners, easy-to-move hand dryers, cleanliness, lightweight, easy to use, easy to maintain, affordable price, and durable. In addition, the questionnaire also contains a choice of additional features on the product desired by the customer where they can choose more than one extra feature. The additional feature options can be seen in Figure 4.

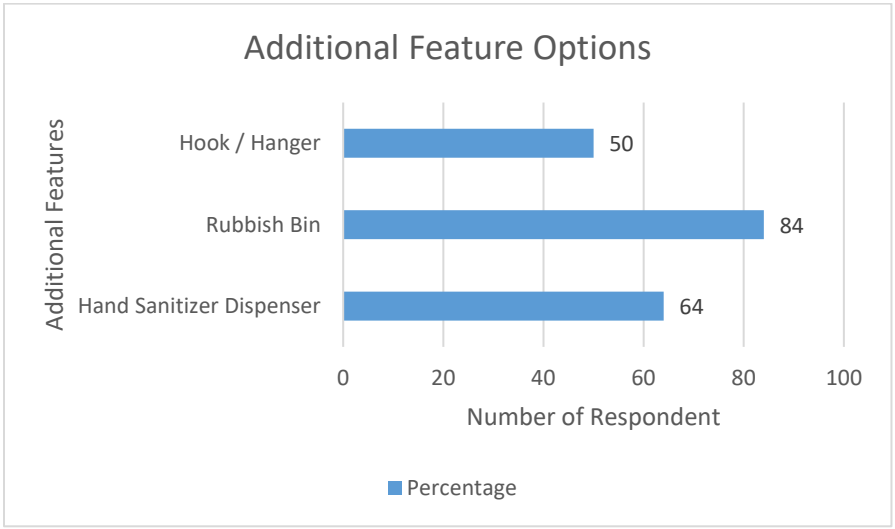


Figure 4. Additional Feature Options

From Figure 4 above, it can be seen that the additional feature most desired by respondents is the rubbish bin.

4.2 Validity and Reliability Test

The results obtained from the questionnaire will go through validity and reliability tests. In determining whether or not an item will be used, a correlation coefficient significance test is usually carried out at a significance level of 0.05, meaning that an item is considered valid if it has a significant correlation with the total score. The results of the calculation of the validity test using the SPSS software can be seen in Table 1 and Table 2.

Table 1. Validity Test Using SPSS Software

Correlations

		X1	X2	X3	X4	X5	X6	X7	X8	X9	Total
X1	Pearson Correlation	1	.121	1.000**	.355**	.302**	.272**	.153	.274**	.142	.647**
	Sig. (2-tailed)		.230	.000	.000	.002	.006	.128	.006	.158	.000
	N	100	100	100	100	100	100	100	100	100	100
X2	Pearson Correlation	.121	1	.121	.136	.174	-.042	.032	.376**	.074	.432**
	Sig. (2-tailed)	.230		.230	.176	.084	.682	.750	.000	.462	.000
	N	100	100	100	100	100	100	100	100	100	100
X3	Pearson Correlation	1.000**	.121	1	.355**	.302**	.272**	.153	.274**	.142	.647**
	Sig. (2-tailed)	.000	.230		.000	.002	.006	.128	.006	.158	.000
	N	100	100	100	100	100	100	100	100	100	100
X4	Pearson Correlation	.355**	.136	.355**	1	.150	.355**	.218*	.208*	.141	.547**
	Sig. (2-tailed)	.000	.176	.000		.136	.000	.029	.038	.162	.000
	N	100	100	100	100	100	100	100	100	100	100
X5	Pearson Correlation	.302**	.174	.302**	.150	1	.163	.376**	.447**	.272**	.608**
	Sig. (2-tailed)	.002	.084	.002	.136		.105	.000	.000	.006	.000
	N	100	100	100	100	100	100	100	100	100	100
X6	Pearson Correlation	.272**	-.042	.272**	.355**	.163	1	.566**	.257**	.112	.580**
	Sig. (2-tailed)	.006	.682	.006	.000	.105		.000	.010	.268	.000
	N	100	100	100	100	100	100	100	100	100	100
X7	Pearson Correlation	.153	.032	.153	.218*	.376**	.566**	1	.408**	.221*	.630**
	Sig. (2-tailed)	.128	.750	.128	.029	.000	.000		.000	.027	.000
	N	100	100	100	100	100	100	100	100	100	100
X8	Pearson Correlation	.274**	.376**	.274**	.208*	.447**	.257**	.408**	1	.189	.678**
	Sig. (2-tailed)	.006	.000	.006	.038	.000	.010	.000		.060	.000
	N	100	100	100	100	100	100	100	100	100	100
X9	Pearson Correlation	.142	.074	.142	.141	.272**	.112	.221*	.189	1	.422**
	Sig. (2-tailed)	.158	.462	.158	.162	.006	.268	.027	.060		.000
	N	100	100	100	100	100	100	100	100	100	100
Total	Pearson Correlation	.647**	.432**	.647**	.547**	.608**	.580**	.630**	.678**	.422**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	100	100	100	100	100	100	100	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Description:
X1=alternative hand cleaner; X2=easy to move; X3=hand dryer; X4;maintain cleanliness; X5=lightweight; X6=easy to use; X7=easy to maintain; X8=affordable price; X9=durable.

Table 2. Result of Validity Test

Variables	R Count	R Table	Result
Alternative Hand Cleaner	0.647	≥0.195	Valid
Easy To Move	0.432	≥0.195	Valid
Hand Dryer	0.647	≥0.195	Valid
Maintain Cleanliness	0.547	≥0.195	Valid
Lightweight	0.608	≥0.195	Valid
Easy To Use	0.580	≥0.195	Valid
Easy To Maintain	0.630	≥0.195	Valid
Affordable Price	0.678	≥0.195	Valid
Durable	0.422	≥0.195	Valid

Data is reliable. The results remain consistent after repeated use of the same subject and conditions. The reliability test results on portable washbin products for public facilities can be seen in Table 3.

Table 3. Reliability Test Using IBM SPSS Software

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.736	.752	9

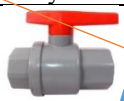
Based on the reliability test results above, which were calculated using IBM SPSS software, it was found that Cronbach's Alpha value was 0.736. The conclusion of the reliability test results is reliable because of the Alpha> R table, where the alpha value is 0.736, and the R table is 0.195. Cronbach's Alpha is worth 75.2%, which means it is greater than 60%, so the questionnaire data is also reliable.

5. Results and Discussion

5.1 Concept Morphology

Concept morphology determines several alternative functions that will be combined into a product concept. Product morphology will be applied to three different product concepts. The concept morphology of portable washbin products can be seen in Table 4.

Table 4. Morphology Concepts

	Components	Aspect	Alternative 1	Alternative 2
A	Shape	Handle Bar	Horizontal Bar	Vertical Bar
B	Shape	Tissue Dispenser	 Roll Type	 Dispenser Type
C	Position	Rubbish Bin	Right Side	Left Side
D	Materials	Caster Wheels	 Nylon	 Rubber
E	Materials	Draining Valve System	 *Ball valve*	 *Gate valve*
F	Open-Close System	Water Tank Cover	Hinge Type	Sliding Type
G	Materials	Main Structure Materials	Light-Weight Steel	Aluminum

Concept 1 | Concept 2 | Concept 3

The picture of each concept for portable washbin products can be seen in Figure 5.

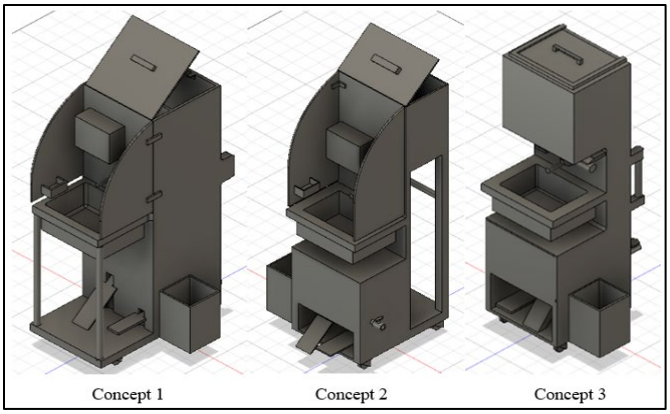


Figure 5. Concept 1, Concept 2, and Concept 3

5.2 Concepts Selection

The best concepts will be selected in the concept selection stage based on the three existing concepts. Concept selection can be seen in Table 5.

Table 5. Concepts Selection

Criteria	Concepts		
	1	2	3
Alternative Hand Cleaner	0	0	-
Easy To Move	+	+	0
Hand Dryer	+	+	0
Lightweight	0	0	0
Maintain Cleanliness	+	+	+
Easy To Use	+	+	+
Easy To Maintain	+	+	+
Affordable Price	+	-	-
Durable	0	0	0
Total (0)	3	3	5
Total (+)	6	6	3
Total (-)	0	1	2
Total Score	6	5	1
Ranking	1	2	3
Continue? (Y/N)	Y	N	N

Based on Table 5 above, the concept that will be continued for the next development is concept 1.

5.3 Portable Washbin Products for Public Facilities

Portable washbin products are designed with lightweight and sturdy aluminum as the primary material and several supporting materials, namely hollow iron and rubber caster wheels. All components are installed by the wishes and needs of the customer. The size of this product is also adjusted to the anthropometry of Indonesian adults to make it comfortable to use. The following is the size of the portable washbin product shown in Figure 6.

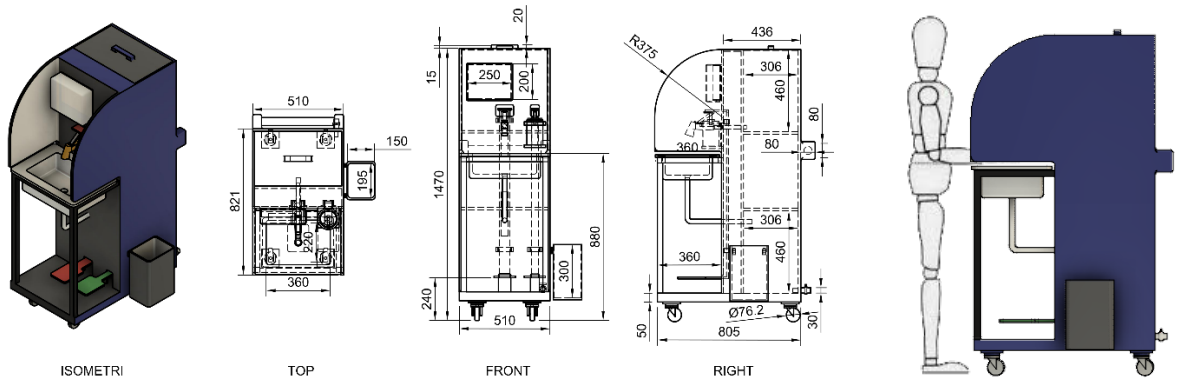


Figure 6. Portable Washbin for Public Facilities

Based on Figure 6 above, the size of the portable washbin product based on the length, width, and height of the product is (510 x 805 x 1470) mm.

5.4 Forecasting

In forecasting, the assumption of the data used is the number of malls, schools, and hospitals in DKI Jakarta from 2017 to 2021. Data on the number of malls, schools, and hospitals can be seen in Figure 7.

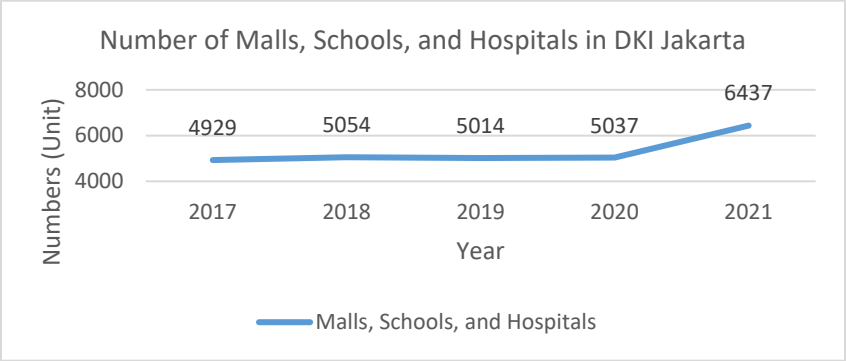


Figure 7. Data of Malls, Schools, and Hospitals in DKI Jakarta

Forecasting is done to determine the number of requests for the next 10 years, assuming a market share of 20%. Forecasting is done by the quadratic method because it has the smallest error value. Forecasting results can be seen in Table 6.

Table 6. Forecasting Result

Year	Forecasting with a Market Share of 20%
2022	1219
2023	1309
2024	1335
2025	1429
2026	1452
2027	1549
2028	1569
2029	1669
2030	1686
2031	1789

The average number of requests is 1501 units per year based on forecasting results. Forecasting results are also used in determining plant capacity. Assuming 260 working days in 1 year and 8 working hours in a day, then P.T. Prima Sanitary will produce 6 units of Portable Washbin products every day.

5.5 Organizational Structure of P.T. Prima Sanitary

The organizational structure of P.T. Prima Sanitary can be seen in Figure 8. Organizational structure is the composition of employees, staff, managers, and leaders who have their respective duties and roles.

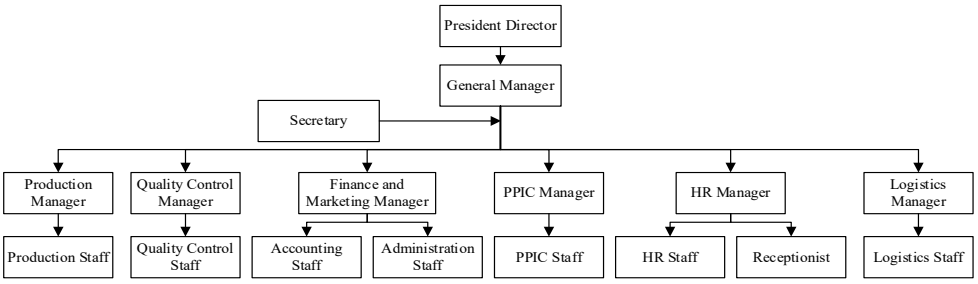


Figure 8. Organizational Structure of P.T. Prima Sanitary

P.T. Prima Sanitary has 50 company employees consisting of 25 office workers, 11 factory workers, and 14 plant service workers.

5.6 Facility Layout

The facility layout of P.T. Prima Sanitary is made with a Systematic Layout Planning method to ensure the flow of material movement is as minimal and efficient as possible. The facility layout of P.T. Prima Sanitary can be seen in Figure 9.

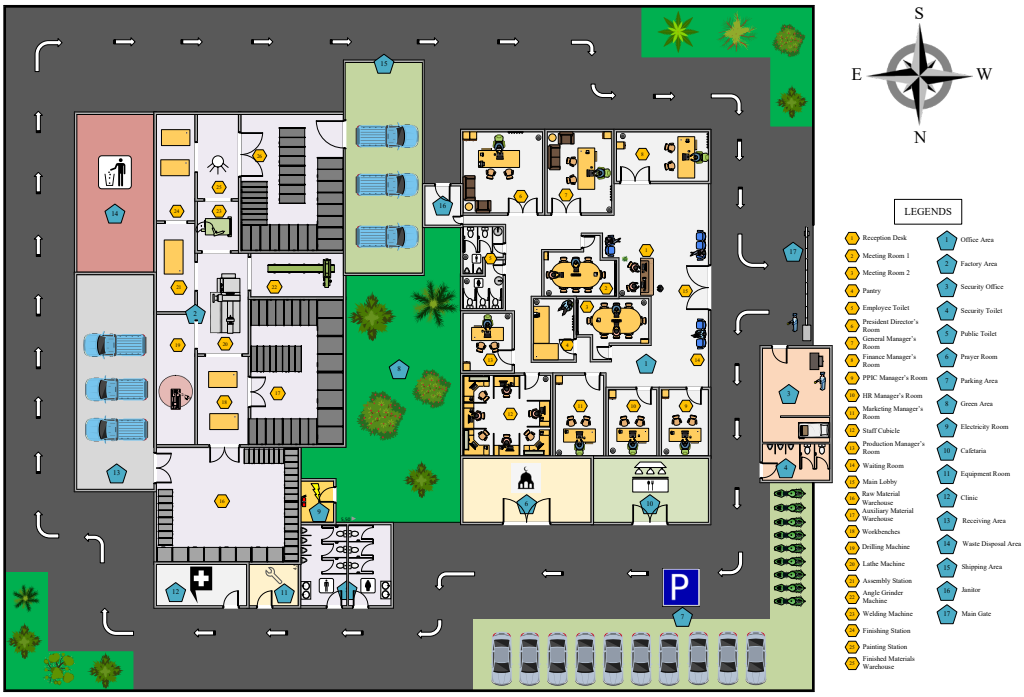


Figure 9. Facility Layout of P.T. Prima Sanitary

The facility building of P.T. Prima Sanitary is located in Marunda, Bekasi City, with 1295 M^2. The building consists of an office building and a factory building separated by a green area. Marunda industrial area is a very suitable location for the establishment of the factory because the roads are made of concrete so that 40 feet trailers can pass.

5.7 Financial Analysis

The cash flow of P.T. Prima Sanitary contains reports of cash income and disbursements for 10 years. Cash flow is essential because it can track every small and large income and expenditure. The cash flow of P.T. Prima Sanitary can be seen in Table 7.

Table 7. Cash Flow

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Profit Projection											
Product Sale		Rp 4.327.450.000	Rp 4.646.950.000	Rp 4.739.250.000	Rp 5.072.950.000	Rp 5.154.600.000	Rp 5.498.950.000	Rp 5.569.950.000	Rp 5.924.950.000	Rp 5.985.300.000	Rp 6.350.950.000
Other Income		Rp 22.545.405	Rp 24.209.955	Rp 24.690.825	Rp 26.429.355	Rp 26.854.740	Rp 28.648.755	Rp 29.018.655	Rp 30.868.155	Rp 31.182.570	Rp 33.087.555
Total Income		Rp 4.349.995.405	Rp 4.671.159.955	Rp 4.763.940.825	Rp 5.099.379.355	Rp 5.181.454.740	Rp 5.527.598.755	Rp 5.598.968.655	Rp 5.955.818.155	Rp 6.016.482.570	Rp 6.384.037.555
Fixed Cost		Rp 2.615.707.605	Rp 2.738.584.870	Rp 2.867.605.999	Rp 3.003.078.185	Rp 3.145.323.979	Rp 3.294.682.064	Rp 3.451.508.052	Rp 3.616.175.340	Rp 3.789.075.993	Rp 3.970.621.678
Variable Cost		Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826	Rp 1.005.992.826
Cost of Goods Sold		Rp 3.621.700.431	Rp 3.744.577.696	Rp 3.873.598.825	Rp 4.009.071.011	Rp 4.151.316.805	Rp 4.300.674.890	Rp 4.457.500.878	Rp 4.622.168.166	Rp 4.795.068.819	Rp 4.976.614.504
Gross Profit		Rp 728.294.974	Rp 926.582.259	Rp 890.342.000	Rp 1.090.308.344	Rp 1.030.137.935	Rp 1.226.923.865	Rp 1.141.467.777	Rp 1.333.649.989	Rp 1.221.413.751	Rp 1.407.423.051
General Cost											
Promotion		Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000
CSR		Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000	Rp 8.000.000
Total General Cost		Rp 16.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000	Rp 16.000.000
Total Operating Profit		Rp 712.294.974	Rp 910.582.259	Rp 874.342.000	Rp 1.074.308.344	Rp 1.014.137.935	Rp 1.210.923.865	Rp 1.125.467.777	Rp 1.317.649.989	Rp 1.205.413.751	Rp 1.391.423.051
Taxes											
Earning Before Tax		Rp 712.294.974	Rp 910.582.259	Rp 874.342.000	Rp 1.074.308.344	Rp 1.014.137.935	Rp 1.210.923.865	Rp 1.125.467.777	Rp 1.317.649.989	Rp 1.205.413.751	Rp 1.391.423.051
Tax		Rp 89.036.872	Rp 113.822.782	Rp 109.292.750	Rp 134.288.543	Rp 126.767.242	Rp 151.365.483	Rp 140.683.472	Rp 164.706.249	Rp 150.676.719	Rp 173.927.881
Earning After Tax		Rp 623.258.103	Rp 796.759.476	Rp 765.049.250	Rp 940.019.801	Rp 887.370.693	Rp 1.059.558.382	Rp 984.784.305	Rp 1.152.943.740	Rp 1.054.737.032	Rp 1.217.495.170
Cashflow Projection											
Earning After Tax		Rp 623.258.103	Rp 796.759.476	Rp 765.049.250	Rp 940.019.801	Rp 887.370.693	Rp 1.059.558.382	Rp 984.784.305	Rp 1.152.943.740	Rp 1.054.737.032	Rp 1.217.495.170
Value											
Investment	-Rp 2.383.189.000										
Net Cashflow	-Rp 2.383.189.000	Rp 623.258.103	Rp 796.759.476	Rp 765.049.250	Rp 940.019.801	Rp 887.370.693	Rp 1.059.558.382	Rp 984.784.305	Rp 1.152.943.740	Rp 1.054.737.032	Rp 1.217.495.170
Cash Accumulation	-Rp 2.383.189.000	-Rp 1.759.930.897	-Rp 963.171.421	-Rp 198.122.171	Rp 741.897.630	Rp 1.629.268.323	Rp 2.688.826.706	Rp 3.673.611.010	Rp 4.826.554.751	Rp 5.881.291.783	Rp 7.098.786.953

Cash flow is also used to determine the payback period and break-even point. The results of the financial analysis of P.T. Prima Sanitary can be seen in Table 8.

Table 8. Payback Period and Break-Even Point

MARR	15%
NPV	Rp 1,781,627,646.99
IRR	33%
B/C Ratio	1.747581349
Payback Period	3.210763827
BEP	9798.37024

Based on the calculation of the payback period and the break-even point in Table 8, it can be concluded that P.T. Prima Sanitary will return on investment within 3.21 years or sell as many as 9798 units of Portable Washbin.

5.8 Sensitivity Analysis

Sensitivity analysis shows whether the company can still survive in uncertain economic conditions. Sensitivity analysis at P.T. Prima Sanitary refers to the price of raw materials, cost of goods sold, and total revenue. Sensitivity analysis can be seen in Table 9.

Table 9. Sensitivity Analysis

Criteria	MARR	NPV	IRR	B/C	Payback Period	Analysis
Raw Material Cost Increase by 5%	15%	Rp 1,192,934,277	27.10%	1.50	3,690	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Raw Material Cost Increase by 10%	15%	Rp 1,058,333,808	25.61%	1.44	3,898	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Raw Material Cost Increase by 20%	15%	Rp 791,340,883	23.00%	1.33	4,251	Business feasible to run (NPV>0,IRR>MARR,B/C>1)

Criteria	MARR	NPV	IRR	B/C	Payback Period	Analysis
Raw Material Cost Increase by 30%	15%	Rp 348,610,444	18.58%	1,15	5.017	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Raw Material Cost Increase by 40%	15%	-Rp 100,286,223	13.95%	0,96	5.838	Business not feasible to run (NPV,0,IRR<MARR,B/C<1)
Cost of Goods Sold Increase by 9%	15%	Rp 376,243,440	18.98%	1.16	4.819	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Cost of Goods Sold Increase by 10%	15%	Rp 220,089,640	17.36%	1.09	5.099	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Cost of Goods Sold Increase by 11%	15%	Rp 63,935,839	15.69%	1.03	5.368	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Cost of Goods Sold Increase by 12%	15%	-Rp 92,217,962	13.99%	0.96	5.671	Business not feasible to run (NPV<0,IRR<MARR,B/C<1)
Total Revenue Decrease by 7%	15%	Rp 414,496,565	19.40%	1.17	4.728	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Total Revenue Decrease by 8%	15%	Rp 219,192,124	17.36%	1.09	5.082	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Total Revenue Decrease by 9%	15%	Rp 23,887,684	15.26%	1.01	5.426	Business feasible to run (NPV>0,IRR>MARR,B/C>1)
Total Revenue Decrease by 10%	15%	-Rp 171,416,756	13.09%	0.93	5.827	Business not feasible to run (NPV<0,IRR<MARR,B/C<1)

Based on table 9 above, then P.T. Prima Sanitary is declared not feasible to run if the cost of raw materials rises to 40%, the cost of goods sold rises up to 12%, or the total revenue drops up to 15%.

5.9. Discussion

According to Kotler (2002), market research is very necessary to find out the wants and needs of the community, based on the questionnaire given, it can be seen that the community's needs during the COVID-19 pandemic are public facilities in the form of portable washbin. According to Djauhari (2014) about the forecasting method, the best forecasting method used in forecasting the number of requests for portable washbin is the quadratic method. According to murdifin and mahfud (2011), a good layout will affect the company's productivity level, then the production floor of P. T. Prima Sanitary uses a process layout that places machines with the same purpose in the same or adjacent areas. According to Maulamin (2021), a company is said to be feasible if the NPV > 0, IRR > MARR, B/C Ratio > 0, and the BEP is below the project age, therefore P.T. Prima Sanitary can be said to be feasible because it meets all the requirements.

6. Conclusion

As a result of this research, it can be concluded that:

1) Based on the validity and reliability test results, all the calculated R values are higher than the R table, and the alpha value is higher than the R table. This condition indicates that the data obtained from the questionnaire is valid and reliable.
2) Based on the results of forecasting with the quadratic method, then P.T. Prima Sanitary will sell 1501 units of portable washbins in one year and produce 6 units in one day.
3) Based on the morphology of the concept, the concept chosen is concept 1 with the primary material aluminum, a rubber caster wheel, a rubbish bin on the right side, a hinge type of water tank cover, and a tissue dispenser.
4) P.T. Prima Sanitary is led by a president director who will lead six divisions, namely production, quality control, finance and marketing, PPIC, Human Resources, and Logistics division, with a total of 25 office employees, 11 factory workers, and 14 plant service workers.
5) Office and factory buildings of P.T. Prima Sanitary are designed with a systematic layout planning method that prioritizes material flow efficiency. The total area of the facility building is 1295 M^2 located in the Marunda industrial area, Bekasi city.
6) Based on the payback period and break-even point calculation, then P.T. Prima Sanitary will return on investment within 3.21 years or sell as many as 9798 units of portable washbin products.

7) Based on the sensitivity analysis, P.T. Prima Sanitary is not feasible when raw material costs increase by 40%, the cost of goods sold increases by 12%, and total revenue decreases by 10%.

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