International Journal of Application on Economics and Business (IJAEB)
Volume 1, Issue 4, 2023. ISSN: 2987-1972

MARKET RESEARCH FOR MULTIFUNCTION SALON CABINET

Elizabeth Clara Santoso[1], Jennifer Juyanto[1], Mario Ajipangestu[1], Lina Gozali[1*], Frans Jusuf Daywin[1], I Wayan Sukania[1], Wilson Kosasih[1], Adianto Adianto[1], Carla Olyvia Doaly[1], Maitri Widya Mutiara[2]

[1]Industrial Engineering Department, Universitas Tarumanagara, Jakarta - 11440, Indonesia
[2]Interior Design Department, Universitas Tarumanagara, Jakarta - 11440, Indonesia
[*]*Email: linag@ft.untar.ac.id*

Submitted: 18-05-2023, Revised: 20-07-2023, Accepted: 15-09-2023

ABSTRACT

Multifunction Salon Cabinet is a salon cabinet that has a high selling value carried out through mass production of the Multifunction Salon Cabinet. Beauty businesses such as salons are in great demand by the public, because in addition to being able to treat the appearance from the top to the bottom of our body, such as hair care, face, hands, feet, and even the skin. Everyone, especially women, cares about their bodies, so the beauty business never loses interest. Economic analysis and added value are important things to do for business continuity. The R-value of the data validity test table with the number of 200 respondents. The calculated R-value for each variable above the table R, so it has been proven that all data collected is valid. The results of reliability testing using the SPSS application, a Cronbach's Alpha value was obtained. It is known that if alpha > 0.7 means that reliability is sufficient, so this test is reliable. Based on the results of the calculation above, a consistency ratio (CR) value was obtained. These results indicate that data consistency is acceptable with a CR value of < 0.1.

Keywords: *Market Research, Salon Cabinet*

1. INTRODUCTION

In this industrial era 4.0, we can find various products and services that facilitate entrepreneurial activities to be effective and efficient. In general, entrepreneurship is a product or service activity that provides opportunities to create business activities by analyzing market needs and opportunities. Beauty businesses such as salons are in great demand by the public, because in addition to being able to treat the appearance from the top to the bottom of our body, such as hair care, face, hands, feet, and even the skin.

Everyone, especially women, cares about their bodies, so the beauty business never loses interest. Many entrepreneurs benefit from this beauty business, but not a few have gone out of business due to improper marketing strategies and suboptimal service quality. So, we can know that the success of a beauty business is determined by the implementation of the right marketing strategy and the good relationships that are lived with consumers. In addition, the beauty business is inseparable from the salon equipment we visit. Salon equipment is the equipment used to help consumers' self-care. There are many variations of salon equipment with different sizes, materials, and models, such as hair dryers, hairsprays, curling irons, vices, and so on.

However, because there is so much salon equipment, not a few salons have the facility to put all the existing equipment, so many tools are damaged. Sometimes, many have difficulty finding when salon equipment will be used because there is so much salon equipment that it takes longer. Therefore, we create a product that can help salons in running their entrepreneurs. The objective of this paper the designing of Multifunction Salon Cabinet, we get interviews with hairdressers and salon workers. The objectives of Multifunction Salon Cabinet are as follows:

a. Creating a cabinet to increase the safety and comfort of salon wardrobe users in entrepreneurial activities.
b. Creating a cabinet that can be moved easily with wheels in all directions.
c. Creating a cabinet equipped with electric sockets.
d. Creating market research for Multifunction Salon Cabinets.

2. LITERATURE REVIEW

Market Research

Market Research is the total demand of buyers for goods or services. However, Stanton defines it as an effort to carry out strategic planning and pricing, promotion and distribution of products to consumers (Istanti et.al 2020).

Validity

Validity is the degree of conformity between a conceptual boundary provided and the operational assistance that has been developed. However, validation is the process of measuring tools to prove the accuracy and precision in carrying out their measurement function (Bilgin, 2018).

3. RESEARCH METHOD

Multifunctional Salon Cabinet requires an efficient and effective research methodology to explain our products realistically. The following is an explanation and a flowchart which can be seen in Figure 1.

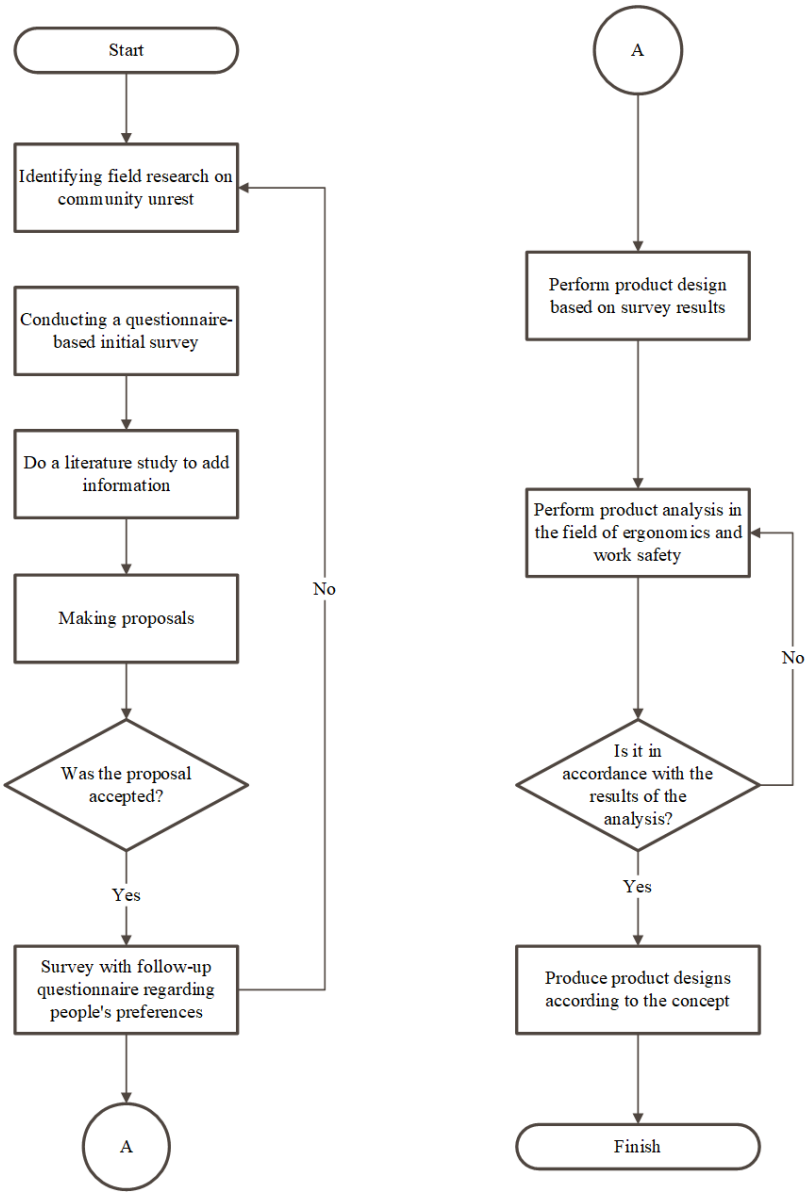


Figure 1. Research Methodology Flowchart

4. RESULTS AND DISCUSSIONS

Market Research also aims to obtain accurate data which is then processed into information so that it can assist marketers in making an effective and efficient decisions. Marketing research data is divided into two, namely primary data and secondary data. In general, primary data and secondary data can be used for research. Primary data can be obtained or carried out by the company concerned. Primary data has information that is more specific, focused, actual, and quite in-depth. While secondary data can be obtained indirectly from research objects in a form that has been collected and processed by research institutions for public purposes. Secondary data can be obtained more quickly and at a lower cost and are supporting data compared to primary data.

Data Validity

Determination of data validity using the significance test of the correlation coefficient at the level of 0.05 because an item is considered valid if it is significantly correlated with the total score. Testing the validity of the data using Pearson Correlation, the analysis is carried out by correlating each item's score with the total score. The test was carried out with a 2-sided test and a significance level of 0.05. If it is found that R counts ≥ R table, then the data is declared valid. The table of R values can be seen in Figure 2 as follows:

DISTRIBUSI NILAI r_{tabel} SIGNIFIKANSI 5% dan 1%

N	The Level of Significance		N	The Level of Significance	
	5%	1%		5%	1%
3	0.997	0.999	38	0.320	0.413
4	0.950	0.990	39	0.316	0.408
5	0.878	0.959	40	0.312	0.403
6	0.811	0.917	41	0.308	0.398
7	0.754	0.874	42	0.304	0.393
8	0.707	0.834	43	0.301	0.389
9	0.666	0.798	44	0.297	0.384
10	0.632	0.765	45	0.294	0.380
11	0.602	0.735	46	0.291	0.376
12	0.576	0.708	47	0.288	0.372
13	0.553	0.684	48	0.284	0.368
14	0.532	0.661	49	0.281	0.364
15	0.514	0.641	50	0.279	0.361
16	0.497	0.623	55	0.266	0.345
17	0.482	0.606	60	0.254	0.330
18	0.468	0.590	65	0.244	0.317
19	0.456	0.575	70	0.235	0.306
20	0.444	0.561	75	0.227	0.296
21	0.433	0.549	80	0.220	0.286
22	0.432	0.537	85	0.213	0.278
23	0.413	0.526	90	0.207	0.267
24	0.404	0.515	95	0.202	0.263
25	0.396	0.505	100	0.195	0.256
26	0.388	0.496	125	0.176	0.230
27	0.381	0.487	150	0.159	0.210
28	0.374	0.478	175	0.148	0.194
29	0.367	0.470	200	0.138	0.181
30	**0.361**	0.463	300	0.113	0.148
31	0.355	0.456	400	0.098	0.128
32	0.349	0.449	500	0.088	0.115
33	0.344	0.442	600	0.080	0.105
34	0.339	0.436	700	0.074	0.097
35	0.334	0.430	800	0.070	0.091
36	0.329	0.424	900	0.065	0.086
37	0.325	0.418	1000	0.062	0.081

Figure 2. Table of R Values

Based on the table of R-values above, it can be seen that the R of the table with N is 200 and a significant level of 5% is 0.138. Figure 3. is the result of testing the validity of data using the SPSS application.

Correlations

		Keamanan	Kemudahan_ Penanganan	Kenyamanan	Estetika	Durabilitas	Kebersihan	Kapasitas	Material	Fitur_Tambahan	Kualitas	Total
Keamanan	Pearson Correlation	1	.313**	.370**	.236**	.260**	.184**	.166*	.341**	.322**	.269**	.609**
	Sig. (2-tailed)		.000	.000	.001	.000	.009	.019	.000	.000	.000	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Kemudahan_Penanganan	Pearson Correlation	.313**	1	.313**	.166*	.281**	.108	.243**	.260**	.348**	.165*	.563**
	Sig. (2-tailed)	.000		.000	.018	.000	.129	.001	.000	.000	.020	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Kenyamanan	Pearson Correlation	.370**	.313**	1	.148*	.162*	.273**	.056	.269**	.295**	.312**	.573**
	Sig. (2-tailed)	.000	.000		.036	.022	.000	.433	.000	.000	.000	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Estetika	Pearson Correlation	.236**	.166*	.148*	1	.282**	.206**	.045	.283**	.167*	.256**	.490**
	Sig. (2-tailed)	.001	.018	.036		.000	.003	.526	.000	.018	.000	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Durabilitas	Pearson Correlation	.260**	.281**	.162*	.282**	1	.347**	.108	.354**	.321**	.205**	.591**
	Sig. (2-tailed)	.000	.000	.022	.000		.000	.129	.000	.000	.004	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Kebersihan	Pearson Correlation	.184**	.108	.273**	.206**	.347**	1	.196**	.307**	.190**	.339**	.568**
	Sig. (2-tailed)	.009	.129	.000	.003	.000		.005	.000	.007	.000	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Kapasitas	Pearson Correlation	.166*	.243**	.056	.045	.108	.196**	1	.135	.145*	.040	.384**
	Sig. (2-tailed)	.019	.001	.433	.526	.129	.005		.057	.041	.570	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Material	Pearson Correlation	.341**	.260**	.269**	.283**	.354**	.307**	.135	1	.431**	.338**	.662**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.057		.000	.000	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Fitur_Tambahan	Pearson Correlation	.322**	.348**	.295**	.167*	.321**	.190**	.145*	.431**	1	.260**	.616**
	Sig. (2-tailed)	.000	.000	.000	.018	.000	.007	.041	.000		.000	.000
	N	200	200	200	200	200	200	200	200	200	200	200
Kualitas	Pearson Correlation	.269**	.165*	.312**	.256**	.205**	.339**	.040	.338**	.260**	1	.567**
	Sig. (2-tailed)	.000	.020	.000	.000	.004	.000	.570	.000	.000		.000
	N	200	200	200	200	200	200	200	200	200	200	200
Total	Pearson Correlation	.609**	.563**	.573**	.490**	.591**	.568**	.384**	.662**	.616**	.567**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	200	200	200	200	200	200	200	200	200	200	200

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

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

Figure 3. The Result of Testing the Validity of Data using the SPSS Application

Based on the calculation of data validity using the SPSS application, a calculated R-value is obtained which can be seen in Table 1.

Table 1. Validity Test Results of 200 Respondents

Variable	R-Value	R Table	Result
Safety	0.609	0.138	Valid
Accessible	0.563	0.138	Valid
Comfortable to Use	0.573	0.138	Valid
Aesthetics	0.490	0.138	Valid
Durability	0.591	0.138	Valid
Cleanliness	0.568	0.138	Valid
Cabinet's Capacity	0.384	0.138	Valid
Material Type	0.662	0.138	Valid
Additional Features	0.616	0.138	Valid
Price	0.567	0.138	Valid

The R-value of the data validity test table with the number of 200 respondents was 0.138. The calculated R-value for each variable above the table R, so it has been proven that all data collected is valid.

Data Reliability

Reliability testing using SPSS with Alpha Cronbach where is in the form of a questionnaire and a multilevel scale. Reliability test results can be seen in Figure 3.3, Figure 3.4, and Figure 3.5.

Case Processing Summary

		N	%
Cases	Valid	200	100.0
	Excluded[a]	0	.0
	Total	200	100.0

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

Figure 4. Case Processing Summary

Reliability Statistics

Cronbach's Alpha	N of Items
.759	10

Figure 5. Reliability Statistics

Item Statistics

	Mean	Std. Deviation	N
Keamanan	4.4450	.63955	200
Kemudahan_Penanganan	4.4300	.64590	200
Kenyamanan	4.3900	.70739	200
Estetika	4.4550	.64813	200
Durabilitas	4.3650	.68125	200
Kebersihan	4.4100	.70312	200
Kapasitas	4.3400	.69774	200
Material	4.3850	.68492	200
Fitur_Tambahan	4.4800	.66469	200
Kualitas	4.4150	.67457	200

Figure 6. Item-Total Statistics

Based on the results of reliability testing using the SPSS application, a Cronbach's Alpha value of 0.759 was obtained. It is known that if alpha > 0.7 means that reliability is sufficient, so this test is reliable.

Variable Weighting with a Likert Scale

The order of importance scales based on the weighting of the largest Likert score values can be seen in Table 2.

Table 2. Order of Weighting of Likert Score Values

Variable	Score (%)	Category
Additional Features	89.6	Important
Aesthetics	89.1	Important
Safety	88.9	Important
Accessible	88.6	Important
Price	88.3	Important
Cleanliness	88.2	Important
Comfortable to Use	87.8	Important
Material Type	87.7	Important
Durability	87.3	Important
Cabinet's Capacity	86.8	Important

Pairwise Comparison Method

Based on the normalization calculation data above, calculations can be made on the Eigen, priority weights, and total scores. In designing the "Multifunction Salon Cabinet" product, priority weights are one of the basic references, so the calculation of eigenvalues, priority weights, and total scores can be seen in Table 3.

Table 3. Calculation of Eigen, Priority Weight, and Total Score

Variable	Eigen	Priority Weights	Total Score (%)
Additional Features	0.30	2.77	30
Aesthetics	0.19	5.72	19
Safety	0.15	8.69	15
Accessible	0.10	13.41	10
Price	0.08	16.34	8
Cleanliness	0.06	19.07	6
Comfortable to Use	0.04	27.87	4
Material Type	0.04	30.53	4
Durability	0.02	45.33	2
Cabinet's Capacity	0.01	58	1
Total	-	277.73	100

After the calculation of the Consistency Vector Calculation with the result 11.29, the next hierarchical consistency (CR) test calculation is carried out. If the hierarchical consistency value < 0.1, then the respondent questionnaire results are declared consistent and acceptable. Hierarchical consistency test (CR) calculations use the random consistency index variable seen in Figure 7.

Tabel Index Random Konsistensi

RCI values corresponding to the order of the matrix

No. of criteria	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RCI	0	0	0,58	0,9	1,12	1,24	1,32	1,41	1,45	1,49	1,51	1,48	1,56	1,57	1,59

Figure 7. Index Random Consistency

The calculation of looking for the consistency index value using the number of data as many as 10 variables is as follows:

$$CI = \frac{\lambda - n}{n-1} = \frac{11.29 - 10}{10-1} = 0.143$$

$$CR = \frac{CI}{IR} = \frac{0.143}{1.49} = 0.096$$

Hierarchical consistency test (CR) ratio values are found in Table 3.4.

Table 4. Hierarchical Consistency Test (CR) Ratio Values

Maximum	11.29
N	10
CI	0.143
IR	1.49
CR	0.096

Based on the results of the calculation above, a consistency ratio (CR) value of 0.096 was obtained. These results indicate that data consistency is acceptable with a CR value of < 0.1.

House of Quality

The House of Quality (HOQ) method is based on market research and benchmarking to translate consumer needs or demands and helps consumers to be more precise on the characteristics of the products designed to pay attention to market segmentation and needs. In addition, this method uses a matrix format to identify specifications in the design process. House of Quality Multifunction Salon Cabinet can be seen in Figure 8.

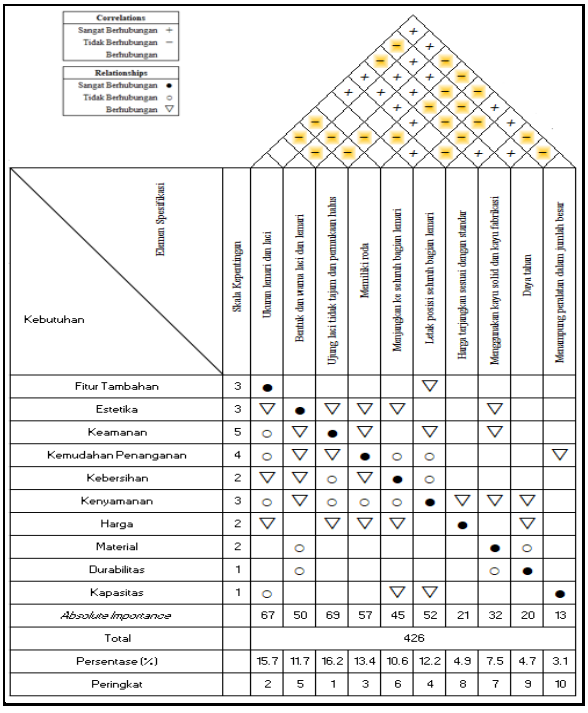
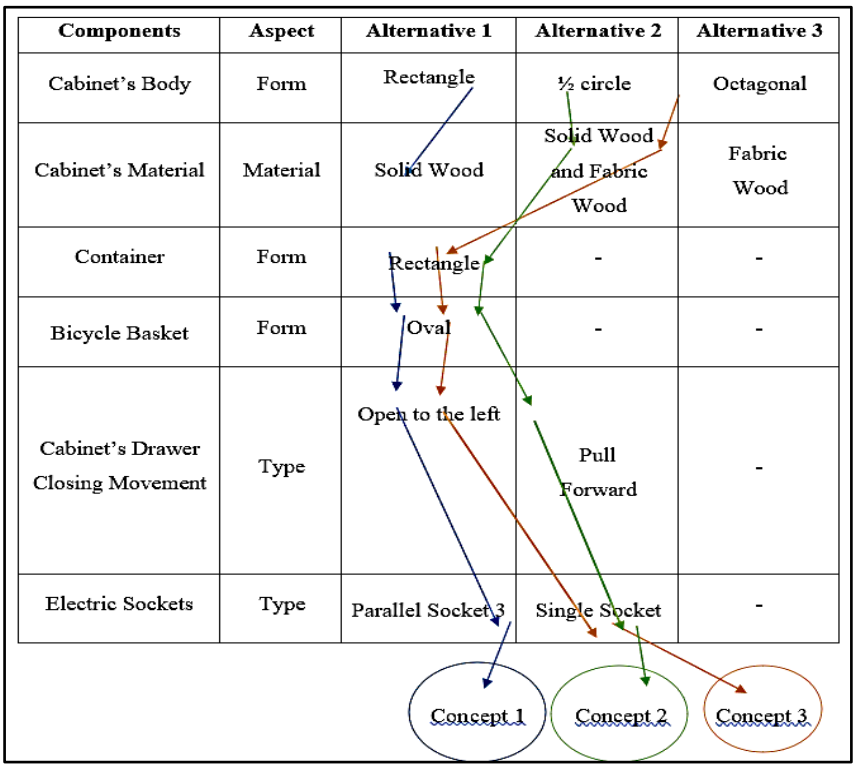


Figure 8. House of Quality Multifunction Salon Cabinet

Morphology Concept

To design a Multifunctional Salon Cabinet using morphological aspects, there are several alternative materials, locations and shapes (Callahan 2012). There are three different concepts for product design for Multifunctional Salon Cabinets which can be seen in Table 5.

Table 5. Multifunction Salon Cabinet Morphology Concepts



Concepts Screening

The best concept of the Multifunction Salon Cabinet is obtained from filtering the concepts that have been made which can be seen in Table 6.

Table 6. Concepts Screening

Selection Criteria	Concept		
	1	2	3
Additional Features	+	+	+
Aesthetics	+	+	+
Safety	0	+	+
Accessible	-	+	0
Cleanliness	-	+	0
Comfortable to Use	0	+	-

Price	0	0	0
Material Type	+	+	+
Durability	0	-	+
Cabinet's Capacity	4	8	5
Amount of +	4	1	3
Amount of 0	4	1	3
Amount of -	2	1	2
Final Score	2	7	3
Ranking	3	1	2
Continue?	Need to be repaired	Yes	Need to be repaired

Operation Mechanism Multifunction Salon Cabinet

The operating mechanism for using the Multifunction Salon Cabinet is to hold a 30 cm cupboard handle positioned straight facing the consumer. The wardrobe has a table mat that has a small hole for a hair straightener and a large hole for a hairdryer, as well as an outlet for the irons and hairdryer to be used. A ½ circle-shaped wardrobe table filled with combs, scissors, hairpins, hair rollers, and mirrors. The first drawer is filled with hair spray and hair cream, the second drawer is filled with hair dye, and the third drawer is filled with nail polish, nail clippers and nail files. In addition, the wardrobe has additional features, namely containers and bicycle baskets. Containers are filled with towels and aprons or hairdressing mats, while bicycle baskets are filled with magazines. The wardrobe uses wheels so it can move freely anywhere.

4. CONCLUSIONS AND SUGGESTIONS

The R-value of the data validity test table with the number of 200 respondents was 0.138. The calculated R-value for each variable above the table R, so it has been proven that all data collected is valid. It is known that if alpha > 0.7 means that reliability is sufficient, so this test is reliable. The results of reliability testing using the SPSS application, a Cronbach's Alpha value of 0.759 was obtained. Based on the results of the calculation above, a consistency ratio (CR) value of 0.096 was obtained. These results indicate that data consistency is acceptable with a CR value of < 0.1.

REFERENCES

Breuer, U. P. (2016). *Commercial aircraft composite technology* (pp. 220-234). Cham: Springer International Publishing.

Bilgin, Y. (2018). The effect of social media marketing activities on brand awareness, brand image and brand loyalty. *Business & Management Studies: An International Journal*, *6*(1), 128-148.

Callahan, P. G., Simmons, J. P., & De Graef, M. (2012). A quantitative description of the morphological aspects of materials structures suitable for quantitative comparisons of 3D microstructures. *Modelling and Simulation in Materials Science and Engineering*, *21*(1), 015003.

Joes, S., De Candra, C., Larsen, H., Marchello, D., Daywin, F. J., Gozali, L., ... & Irawan, A. P. (2021, March). The design development of an ergonomic public trash bin for COVID-19 medical mask waste. In Proceedings of the *International Conference on Industrial Engineering and Operations Management, Singapore* (pp. 7-9).

Garetti, M., & Taisch, M. (2012). Sustainable manufacturing: trends and research challenges. *Production planning & control*, *23*(2-3), 83-104.

Gozali, L., Rafael, G., De Candra, C., Masrom, M., Gunadi, A., & Zagloel, T. Y. M. (2022, December). Smart Wristwatch and Apps for Healthy People with Congenital Diseases and a Healthy Lifestyle. In *2022 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)* (pp. 0722-0726). IEEE.

Istanti, E., Sanusi, R., & Daengs, G. S. (2020). Impacts of price, promotion and go food consumer satisfaction in faculty of economic and business students of Bhayangkara University Surabaya. *Ekspektra: Jurnal Bisnis dan Manajemen*, *4*(02), 104-120.

Maryatmi, A. S., Safitri, H. N., & Fardila, R. (2021). The Influence of Nutrition as A Part of Ergonomic Recommendations on Work Productivity Employees. *European Journal of Psychological Research Vol*, *8*(1).

Sylvia, Robin, Jennifer Darlene Chrissy, Rio Karuna, Lina Gozali, Carla Wilson Kosasih, Olivia Doaly, Lithrone Laricha, Mohammad Agung Saryatmo, and I. Wayan Sukania. "Product Design and Business Feasibility Analysis of Extendable Chair."

Sutianto, L., Gozali, L., & Daywin, F. J. Modification of Food Dehydrator for Tea Blend Products Using Reverse Engineering and VDI 2221 Methods.