

E-Commerce Based Technopreneurship For Developing Sales Of Small And Medium Industrial Products

Suranto Suranto¹, Adcharina Pratiwi²

¹Industrial Engineering, Muhammadiyah University of Surakarta, ²Management of Slamet Riyadi University Surakarta

Email: sur185@ums.ac.id, adcharina.pratiwi@unisri.ac.id

Keywords

Batik, digital, improvement, marketing

Abstract. Research at the Masaran Sragen batik industry center aims to formulate a set of technopreneurship marketing strategy models based on digital e-commerce in order to increase product sales capacity in small and medium industries. The benefits of the research resulted in the formulation of a model and implementation of batik marketing that is goodness of fit and effectively implemented. The research object was carried out at the SME batik industry center Masaran Sragen. Data collection methods are through questionnaires, observations, interviews and direct activities at batik IKM. The analysis method is by formulating a digital marketing implementation model, e-commerce, through regression to determine the influence of indicators for implementing digital marketing strategies on increasing the sales capacity of batik products. Digital marketing strategy variables include: company website (X1), TikTok social media account (X2), Instagram social media account (X3), Facebook social media account (X4), digital marketing marketplace (Shopee) X5, product catalog (X6), YouTube social media account (X7), company nameplate promotion (X8) and company profile (X9) and business capacity variable in the form of sales volume (Y). Based on the analysis, a formulation of a marketing technopreneurship implementation model based on digital goodness of fit was produced, digital marketing market place (shopee) dominantly influences increasing sales capacity, overall the implementation of digitalization variables influences increasing sales volume.

1. INTRODUCTION

Small and Medium Industries (IKM) have a big role in driving the rate of economic growth and employment, which is very important for absorbing business opportunities, which contributes to the formation of local original income (PAD) [1]. The creative industry in Indonesia has many sectors: fashion, culinary, creative industry, handicrafts and so on, one of which is a cultural heritage is batik. Indonesian Batik is a form of historical journey that has proven its existence to this day [2].

The condition of batik, according to its motifs and patterns, has developed from year to year according to each region and era. The diversity of motifs and patterns as a wealth of batik creations is a reflection and identity of the Indonesian nation within the framework of Bhinneka Tunggal Ika, Indonesia's diverse tribes, religions, races and languages remain one unit, namely the Indonesian nation.

Regarding the diversity of batik motifs, there are very various conditions and forms of motif patterns, starting from Aceh batik with motifs: rencong, Aceh door and gayo; West Sumatran batik motifs with patterns: palm leaves, ketok hammer, Padang balimbiang, Itik returning patang and rangkiang; Bengkulu batik with Besurek motif; Riau floral motif with very soft color nuances with perpendicular grooves; Palembang has Lasem and Flower Tea motifs, as well as Jambi, Kalimantan, Sulawesi, East Nusa Tenggara and Papua have their own characteristics [3].

The unique motifs and local patterns of batik are characteristic of each region as local wisdom and excellence that has great potential to be developed. Batik business development requires pro-active steps from all parties, both sales and marketing. The millennium era is all sophisticated in technology, different from previous eras, there are no distance and time limits to expand product sales. Factors that influence the development of batik businesses include: reliable human resources and the role of government [4].

The success of a batik business is shown through the high and low factors of creativity, design, efficiency and quality of batik [5]. Small and medium batik industries require the role and intervention of the government in order to increase competitive capabilities, regulations, regulations that favor small industries in terms of credit, increasing human resource excellence, batik product quality, innovation and prices [6]. The existence of batik SMEs has been covered in accordance with regulations for utilization, preservation and improvement of business management. Evidence shows that the government supports the development and preservation of national batik with regulations: Minister of Home Affairs Regulation number 53/2009 on the use of batik in domestic government agencies; Minister of Trade Regulation number 86/2015 on imports of textiles, textile products, batik motifs, maintaining production and marketing of domestic batik; Presidential Decree number 44/2016 on business, regulates investment, prevents capital monopoly in batik SMEs [7]. Through these government regulations, the development of batik SMEs, batik users and SMEs experienced an increase in batik business [8]. The development of the batik business is predicted to continue to increase, therefore market conditions in the batik creative industry will also experience a significant increase in competition, between local, regional and national batik MSMEs or SMEs, as well as competition in the multinational batik industry. This can be seen from the beginning of the growth and development of small industries and small businesses in batik industrial centers in several regions of Indonesia, especially in the Masaran Sragen batik industrial center, which has experienced an increase in the number of entrepreneurs from year to year [9]

The batik market and industry is experiencing competition, as proven in the Sragen area, there are three sub-districts that provide batik cloth, namely: plupuh, Kalijambe and Masaran sub-districts. Masaran sub-district has the most batik SMEs spread across the villages of Pilang, Kliwonan, Beku, Sidodadi and Jantran villages. Three sub-districts which are located side by side typically have the same characteristics, made from the same raw materials, namely: cotton, primis, primisima and floral and fauna motifs [7]

The condition and existence of batik SMEs in Masaran has been around for more than 100 years, but the majority: are not as well known as batik in Laweyan Solo, Imogiri batik in Bantul, and other batik; sales are found to be still offline, traditional, according to orders and consignment, so they have not been able to change millennial marketing strategies properly, this is due to lack of market access, weak mastery of technology and old generation players or generation Y (generation before millennials). Based on observations and research, stagnant conditions in production quantities, decreased sales, buildup of production quantities, weak marketing, majority sales through resellers and orders, of course this will affect sales volume and production [7].

The problems that arise in the Masaran batik industrial center are of course urgent to study in more depth and solutions are needed using a persuasive approach, direct observation, problem mapping, interviews and questionnaires to sharpen the problems faced. Therefore, this research aims to formulate a strategy and implementation of digital-based marketing to increase the volume of batik sales so that it increases further.

The right development formula, coupled with the right marketing strategy and the behavior of batik entrepreneurs who are ready to improve in this digital era, with the application of marketing digitalization is expected to be one of the initial breakthrough solutions for sales strategies. The use of digital accounts such as: social media in marketing is very necessary and must be owned by all Sragen batik SMEs, which will really support sales. Therefore, the importance of knowledge and skills in implementing digital-based marketing, the research team helped create social media accounts and began to implement them by SMEs, so that sales results could be observed according to the specified period. This is intended so that batik entrepreneurs can increase sales to the maximum which ultimately increases production. Based on research in batik industry centers totaling 160 MSMEs, several MSME businesses are experiencing difficulties at different levels, such as: capital, knowledge

and skills of human resources, access to technology, production processes, marketing, promotion, online mastery (network) and bank access [10]

A technopreneurship-based entrepreneurial approach, through a digital marketing or technology-based sales approach, marketing media accounts have been created which are expected to provide faster market access so that there will be a jump in sales through cyberspace, because access is wide and almost people use Android in their communication activities. Based on [11] Indonesia's internet users reached 212.35 million people, with this number, Indonesia is in third place with the most internet users in Asia. In first place, China with internet users reaching 989.08 million people. Seeing the reality of this digital era, it is an opportunity for business people to utilize their product marketing. Therefore, batik IKM or MSMEs are expected to have skills and creativity, technology-friendly innovation. Creativity as the ability to develop new ideas to find new ways of looking at problems and opportunities. This is related to humanware, including thinking about new things through efforts to increase knowledge, skills, attitudes and behavior in business [12].

Technopreneurship-based entrepreneurship through the application of technology and innovation requires ability, knowledge, skills in applying creative solutions to problems and opportunities to improve and enrich the lives of SMEs. This relates to technoware, infoware and organware to do new things that are tailored to production needs or create batik works that are aligned with consumer needs and the progress of the times. Research activities focus on technopreneurship with the implementation of digital marketing, in the form of: company website (X1), TikTok social media (X2), Instagram social media (X3), Facebook social media (X4), digital marketing (Shopee) X5, product catalog (X6), YouTube social media (X7), company nameplate promotion (X8), MSME company profile (X9) on increasing sales (Y).

2. METHOD

Research activities were carried out at the Masaran Sragen batik industry center, with the research object as a sample of five MSME batik entrepreneurs (Qiana batik, Rafida batik, Amin barokah batik, Budiluhur batik and Rejeki batik) taking into consideration: representation of the problems faced by small businesses, place different, each village area is represented by 5 MSMEs; crucial and urgent problems are resolved in order to grow; Batik SMEs that do not yet have social media accounts, product sales have decreased; batik production which is still piling up; minimal information about consumers who will enter the batik industry center directly. Therefore, based on the problems of previous researchers[13], a gap was found that had to be resolved, regarding building batik entrepreneurship through technopreneurship to increase sales volume. This research has the latest: formulating a digital-based marketing strategy, analyzing the relationship between social media and sales, research using a quantitative approach by raising existing problems, and qualitative data using batik informants; as well as problem solving for batik entrepreneurs regarding the causes of low sales and minimal turnover.

Research approach in the field with an interactive participatory model and a combination of mentoring and counseling activities for batik SMEs through an emphasis on technopreneurship-based entrepreneurship. Counseling as a guide to understanding the importance of digitalization, as well as assistance in creating social media accounts and digital marketing accounts, market places (shopee). Digitalization in marketing includes 7 accounts, 1 company profile and 1 marketing media in the form of a billboard. The digitalization implemented is: company website regarding information and sales systems, TikTok social media, Instagram social media, Facebook social media, digital marketing (Shopee), product catalogue, YouTube social media, company nameplate promotion, company profile regarding the existence of IKM [14], [15], [16], [17].

The research stages include activities: (a) problem mapping, (b) formulating a marketing strategy model, (c) determining problem solutions, (d) data collection and data analysis, (e) marketing results. A quantitative research paradigm is used to understand the model of the relationship between

one variable and another [18] and a quantitative study was carried out to examine marketing strategies on sales volume. Using path analysis to analyze the marketing strategy model of the relationship between marketing strategy factors [19]: company website, TikTok social media, Instagram social media, Facebook social media, digital marketing (Shopee), product catalog, YouTube social media, company nameplate promotion , company profile.

Data collection using: questionnaires, observation, direct observation in the field, documentation and literature study. Data analysis using: descriptive and regression analysis through the results of questionnaires and interviews to explore sources of respondents, analysis of the validity and reliability of the questionnaire, regression analysis to determine the relationship between marketing strategy variables: company website (X1), TikTok social media (X2), social media Instagram (X3), Facebook social media (X4), digital marketing (Shopee)).

The digital marketing construct variable has indicators: (company website, TikTok social media, Instagram social media, Facebook social media, digital marketing (Shopee), product catalog, YouTube social media, company nameplate promotion, company profile), while sales volume has sales indicators increase, production increases and profits increase, consumers increase [20],[21], [22],[23]. The concept of a technopreneurship business system based on e-commerce for batik industry centers is in Figure 1.

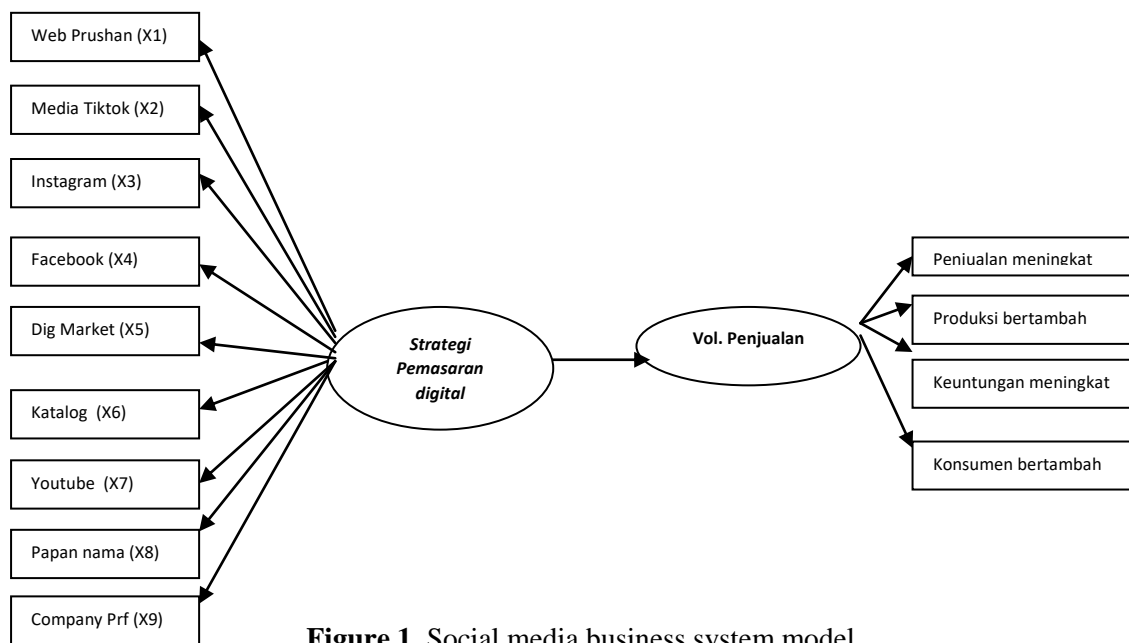


Figure 1. Social media business system model

3. RESULTS AND DISCUSSION

Results

Research activities are carried out in stages: (a) problem mapping, (b) formulation of development models, (c) determining problem solutions, (d) data mining and analysis, (e) assistance in creating digital accounts, (f) monitoring marketing results. Based on the mapping, there are nine indicators for increasing sales through digital marketing variable media. Formulate a marketing model analyzing the effect of implementing appropriate digital marketing to increase sales. The data is said to be valid and reliable according to table-1 and table-2 .

Table-1. Validity results

	Scale Mean	Scale Variance	Corrected Item-Total Correlation	Cronbach's Alpha
Web_pershn	32.45	8,21	.65	.83
TikTok	31.55	8,02	.74	.80
Instagram	33.40	8,43	.78	.87
Facebook	33.56	9,25	.52	.91
Dig	33.55	8,46	.60	.83
Market/Shopee				
Catalog	33.50	8,78	.56	.91
YouTube	33.60	8,42	.52	.88
Name plate	33.65	8,10	.65	.86
Company profile	33.28	8.32	.52	.84

Table-2. Reliability results

Cronbach's Alpha	N of Items
.913	9

Based on the results of table-1 and table-2, the question items (items) used to measure digital marketing strategy (social media) X variables are all reliable, because they have a Cronbach's Alpha coefficient > 0.7 . Meanwhile, the questionnaire validity and reliability tests for the sales volume variable are according to table-3 and table-4.

Table-3. Sales Volume Validity Test

	Item-Total Statistics			Cronbach's Alpha
	Scale Mean	Scale Variance	Corrected Item-Total Correlation	
Desc_increase	14.54	2,30	.65	.73
Product_increase	14.69	2,13	.58	.74
Profit_increase	14.82	2,13	.51	.77
Konsumn_btambah	14.78	2.00	.55	.78

Table-4. Reliability Statistics

Cronbach's Alpha	N of Items
.902	4

The value of the digital based tech no preneur ship model formulation is according to table 5, namely model analysis. Said to be feasible if formulated model___telah menstampai GoodnessOfFit(GOF),sesuai persamaan model. Cesusuain Goodness Of Fit (GOF), bertujuan_evaluate kecocokan antara kovariansampel dengan populasi. Model_di dapatkan hasil yang good and fit, sesuai gasisrlandn recapitulasi hasil tabel-5,according to the opinion of[24].

Tabel-5. Hasil good ness of fitind ex model

No	Index	CutoffValue	Hasil	Keterangan
1	KaiKuadrat(p)	Kecil($p > 0.05$)	112.12(0.070)	Terfulli
2	CFI	≥ 0.90 (max_1)	0.932	Terfulli
3	GFI_	≥ 0.90 (max_1)	0.929	Fulfilled
4	AGFI	≥ 0.90 (max_1)	0.936	Fulfilled
5	RMSEA	≤ 0.08 (Min0)	0.061	Terfulli

Next, multiple linear regression analysis is used to find the influence of the independent variable on the dependent variable, the analysis table is shown in tab el-6.

Table-6. Multiple Regression Test

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	10.77	4.67			2.30	.018
X1 Web_pershn	.26	.05	.52		4.98	.000
X2 TikTok	.27	.05	.54		4.86	.000
X3 Instagram	.35	.06	.71		5.78	.000
X4 Facebook	.22	.04	.44		4.62	.000
X5 Dig Market/Shopee	.50	.08	1.00		5.98	.000
X6 Catalog	.25	.05	.50		4.37	.000
X7 Youtube	.26	.09	.52		2.87	.000
X8 Nameplate	.20	.05	.40		3.52	.000
X9 Company Prof	.20	.05	.40		3.51	.000

The t-student test is used to test *independent variables* individually (individually) against the *dependent variable*. The F test is used to determine the influence of *independent variables* simultaneously (together) on the *dependent variable*. The F test value can be seen from the comparison of calculated F with table F using a significance level of 5%. The results of the analysis are shown in tab el-7 and the simultaneous influence test in tab el-8.

Table-7. F test

Model	R Squares	df	Mean Square	F	Sig.
1 Regression	1105.69	4	276.42	33.25	.000 ^a
Residual	824.16	96	8.58		
Total	1929.86	100			

- a. Predictors: (Constant), X 5 DigMar/Shopee , X 3 Instagram , X2 Tiktok, X1 Web Pershn, X7 Youtube, X6 Catalog, X4 Facebook,
b. Dependent Variable: Y Sales_Vol

Table -8. Test R Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.90 ^a	.84	.82	2.24

- a. Predictors: (Constant), X 5 DigMar/Shopee , X 3 Instagram , X2 Tiktok, X1 Web Pershn, X7 Youtube, X6 Catalog, X4 Facebook,
b. Dependent Variable: Y Sales_Vol

Analysis of the Coefficient of Determination (R^2), the coefficient to measure the magnitude of the contribution of the variation

Discussion

The next stage discusses the results of data collection and the digital marketing model developed. Based on the analysis of the structural marketing model formulation, the model is declared valid and reliable in having an influence on sales volume. All items have valid and reliable values and the manifest variables are able to reflect the construct variables.

Next, the marketing model is tested and analyzed to determine its respective effects. The *student t* test is used to test the respective hypotheses of the influence of X1 on Y, X2 on Y, X3 on Y, X4 on Y, X5 on Y, X6 on Y, X7 on Y and used to test simultaneously (simultaneously) variable X against variable Y. Based on the analysis results it is known that Meanwhile, X2 (Tiktok) has an effect on Sales Volume of 27.2% and has a significant value. X3 (Instagram) has an effect on sales volume of 35.8%, X4 (Facebook) has an effect on sales volume of 22.1% and has a significant value. X5 (Digital marketing/Shopee) has an effect on sales volume of 50.2% and is significant. X6

(catalog) has an effect on sales volume of 25.3% and is significant. X7 (*YouTube*) has an effect on sales volume of 26.3% and is significant. X8 (nameplate) has an effect on sales volume of 20.3% and is significant. X9 (company profile) has an effect on sales volume of 20.3% and is significant.

Thus, the dominant variable influencing Sales Volume is Digital Marketing / Shopee (X5). Based on simultaneous analysis of the F test, and the magnitude of the influence of digital-based marketing strategies has an influence of 50.2%. Marketing strategies through digitalization in the form of Shopee digital marketing are very good to implement to increase sales. The formulation of a digital-based marketing strategy model, can implement: (a) digitalization-based marketing such as Shopee , so that it can be seen, found and searched by consumers through Shopee stalls , (b) marketing via social media such as: TikTok, Instagram and Facebook or variables others can be used as support, (c) every company is expected to have an account opened by a stall such as shopee so that batik products can be known to consumers and can provide some information, (d) every company in the surrounding area is advised to have a product catalog as information on the products they make and market via Shopee. Based on observations over the last two months, sales have increased significantly through Shopee accounts.

The batik MSMEs in Masaran Sragen are expected to be technology friendly, so that entrepreneurs' behavior begins to change, marketing increases and consumers increase in technopreneurship-based entrepreneurship. The research provides the best solution if applied by all batik entrepreneurs and other entrepreneurs/SMEs in the Masaran batik industrial center, so that a digital-friendly village can be created, economic welfare will increase and sales will increase.

Recommendations for MSMEs and surrounding batik entrepreneurs must prepare Strategic marketing includes the application of technopreneurship : enterprise strategy, corporate strategy, business strategy and functional strategy . The strategic approach for batik entrepreneurs in this research is functional strategy , namely oriented towards (a) a functional economic strategy, which includes the functions of a healthy and increasing batik entrepreneur in marketing, resources and finance; (b) management 's functional strategy, which includes the functions of planning, organizing, implementing, controlling, staffing, leading, motivating, communicating, decision making, representing and integrating;(c) strategic issues strategy, functions to follow developments in environmental situations that are already known and situations that are unknown or that are always changing.

In connection with the functional strategy, empowerment for batik entrepreneurs in Masaran Sragen can be carried out using a functional economic approach, such as marketing fields such as marketing mix. Functional management strategies that can be carried out by providing increased managerial abilities (managing the organization/business) for batik entrepreneurs and strategic issue strategies that can be carried out through batik entrepreneurs' understanding of market conditions and needs .

4. CONCLUSION

Based on the results of the analysis and discussion, it was concluded that the research was very useful for batik entrepreneurs in the Masaran Sragen batik industry center. The formulation of marketing strategies through the implementation of digital marketing is very effective, good and fit. The marketing digitalization variable has a big influence on increasing sales volume, especially digital marketing (Shopee).

REFERENCES

- [1] Abdul, H. (2020). The Influence of the Growth of Micro, Small and Medium Enterprises on the Economic Growth of Mamuju Regency. *Growth: Scientific Journal of Development Economics*, 1 (2), pp: 157-172.

- [2] Adcharina, P., AL Riani., M. Harisudin., S. Rum. H. Pinta. (2020). The Development of Market Oriented Batik Product Based on Customer Buying Intention (Industrial Center of Batik Sragen Indonesia). *International. Journal. Management.* 11(3), pp: 373–389
- [3] Quinine. (2013). Center for Public Communications. Jakarta: Ministry of Industry
- [4] Arfan, B., Sriyanto & Amalia. (2009). Analysis of Factors That Influence the Development of Creativity in the Batik Craft Industry. *Undip Industrial Engineering Journal*, 4 (1), pp: 17-24.
- [5] Simatupang, TM (2008). Development of Creative Industries. Newspaper: People's Thoughts, pp. 28.
- [6] Daryono & Wahyudi. (2008). Competency Analysis of Regional Featured Products in Solo Batik and Stamps in Dati II, Surakarta City. *Journal of Development Economics*, 9(2): 184–197.
- [7] Pratiwi, A., & Rais, NAR (2021). Social Media Training for Batik Entrepreneurs During the New Normal Covid 19 Pandemic Masaran Batik Industry Center. *Journal of Our Community Service*, 1(2), 31-36.
- [8] Adcharina. Pratiwi., AL Riani, M. Harisudin, and SRH Pinta.,2020. Marketing Model For Creative Industry Batik Market Oriented In The Industry Era 4.0). ISSN 04532198,” Technol. Reports Kansay Univ., Japan
- [9] Ministry of Trade. (2018). Sragen MSME Work Results Report. Sragen. Ministry of Industry
- [10] Novitasari AT (2017). The Influence of Working Capital, Workforce Skills, and Innovation on the Growth of Batik Small Businesses in Tanjung Bumi District, Bangkalan Regency. *Eco-Socio: Journal of Economic-Social Science and Education*, 1 (1). ISSN: 2597-7806.
- [11] Kusnandar. VB (2021). Indonesian Internet Users Rank 3rd Most in Asia. *internetworldstats.com*. pp.1-2.
- [12] Raf, M. (2012). Explanatory Analysis of Small Industry Competitiveness Factors (Study of Batik Small Industry Centers in Jambi City). *Journal of Management and Entrepreneurship*, 14 (2), pp: 91-101.
- [13] Suranto., Nurgiyatna., Musabbikha., Adcharina.P., Aan.S., (2021). Batik AV Production Business Governance Model in Pilang Masaran Sragen. *Mathing Fund Report 2021*. Surakarta. LPMPP UMS Surakarta
- [14] Anonymous. (2015). Echoes of Small Industries: Information Media for Small and Medium Industries. Directorate General of Small and Medium Enterprises, IX October 2015
- [15] Muhammad.S., Markus.A., Muhammad.AF, Bismin. (2021). Developing SME Product Video Content as a Promotional Effort via Social Media. *Gaung Informatics Journal*. 14. (1). PP 1-12.
- [16], Nasrullah. R. (2016). *Cyber Media Theory and Research. (Cybermedia)*. UM Palembang. Kencana.
- [17]. Silaningsih, E., & Utami, P. (2018). Effect of Marketing Mix on Consumer Purchase Interest in Micro, Small and Medium Enterprises (SMEs) Processed Snack Products. *Social Humanities Journal*. 9(2): pp: 144-158.
- [18] Creswell. (2016). *Mixed Methods Research in Sport Marketing*. *International Journal of Multiple Research Approaches*. 09 (01).pp: 45-57
- [19] Setiawati E., Nursiam, Zulfikar. (2015). Batik Commodity Development: Determination of Economic Culture and Changes in Policy Structure for the Development of Local Economic Enterprises (Study of Surakarta Laweyan Batik Entrepreneurs). *Journal of Economics and Business*. 17(1). ISSN: 1979 – 6471.
- [20] Christine., & Wiwik Budiawan. (2017). Analysis of the Influence of Marketing Mix (7P) on Consumer Repurchase Interest (Study at House of Moo, Semarang). *Journal of Industrial Engineering Online*. Vol. 6. No. 1.
- [21] Alma, B. (2011). *Marketing Management and Services Marketing, Purchase Printing*, Alfabeta, Bandung.

- [22] Widya. (2010). The influence of marketing mix strategy and competitive advantage on the market share of small fish processing industries in North Sumatra. *Journal of Accounting and Business Research*. 10(1)pp: 80-88
- [23] Kotler, P & Gary Armstrong. (2014). *Principles of Marketing*, 15th edition. New Jersey: Pearson Prentice Hall
- [24]. Putri, Prisma Miardi, and RA Marlien. 2022. "The Influence of Digital Marketing on Online Purchasing Decisions." *Jesya (Journal of Sharia Economics & Economics)* 5(1): 25–36.